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STANDARDS DEVELOPMENT BRANCH OMOE
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STOPPING WATER POLLUTION AT ITS SOURCE

MISA
Municipal/Industrial Strategy for Abatement

SUMMARY
TWELVE MONTH MONITORING DATA REPORT
INDUSTRIAL MINERALS SECTOR

Ontario
Environment
Environnement

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Summary twelve month
monitoring data report
industrial minerals sector : for
the periods February 1, 1990 to

50852

50852

ISBN 0-7778-0386-0

MUNICIPAL-INDUSTRY STRATEGY FOR ABATEMENT (MISA)

SUMMARY
TWELVE MONTH MONITORING DATA REPORT
INDUSTRIAL MINERALS SECTOR

For the periods
February 1, 1990 to January 31, 1991
and
August 1, 1990 to July 31, 1991

Report Prepared By:

Water Resources Branch
Ontario Ministry of the Environment

MAY 1993

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EXECUTIVE SUMMARY

This report contains data obtained under the Industrial Minerals Effluent Monitoring Regulation (Ontario Regulation 91/90) and data from the two salt plants collected under the Metal and Salt Mining Effluent Monitoring Regulation (Ontario Regulation 481/89 as amended to Ontario Regulation 44/90).

Data collection covered the period February 1, 1990 to January 31, 1991 for the salt plants and August 1, 1990 to July 31, 1991 for all other plants.

With the inclusion of the salt operations in the Industrial Minerals Sector, the data represent effluents discharged by industrial mineral plants in the Province of Ontario.

Effluents were analyzed for the sector list of 150 parameters. A total of 34 parameters were "found" in one or more of the effluents in the sector. The 34 "found" parameters were made up of 9 organic chemical substances, 8 metals and 17 conventional substances.

The total annual loadings of the organic parameters "found" in the industrial minerals sector effluents were as follows:

PARAMETER	KG/YEAR
Toluene	0.02
Di-n-butyl phthalate	8.6
Phenanthrene	0.2
2,4-Dimethylphenol	10.1
Pentachlorophenol	0.06
Phenol	37.3
m-Cresol	13.5
o-Cresol	18.1
p-Cresol	17.2

Six of the organic chemical substances were "found" at one plant site, Reiss Lime Company of Canada Ltd., in Spragge, Ontario.

The total annual loadings of the 8 metals "found" in the industrial minerals sector effluents were as follows:

PARAMETER	KG/YEAR
Aluminium	17,600
Cadmium	6
Cobalt	39
Copper	42
Molybdenum	9
Nickel	793
Vanadium	2,440
Zinc	758

The total annual loadings of the conventional parameters found in the industrial minerals sector effluents were as follows:

PARAMETER	KG/YEAR
Cyanide Total	142
Total Phosphorus	991
Total Suspended Solids	2,210,000
Phenolics (4AAP)	357
Sulphides	9,790
Oil and Grease	103,000
Ammonia plus Ammonium	30,200
Total Kjeldahl Nitrogen	3,220
Nitrate plus Nitrite	97,400
Dissolved Organic Carbon (DOC)	282,000
Total Organic Carbon (TOC)	3,440
Chlorides	23,300,000
Dissolved Solids	30,700,000
Fluorides	905
Sulphates	22,000,000
Cyanide (Weak Acid Dissociable)	4
Arsenic	48

A total of 47 plants took part in the monitoring program. 68 effluent streams were monitored, including one intake stream.

Acute toxicity testing occurred at 46 sites instead of 47 sites due to plant closure. For 4 sites, samples were consistently lethal to one or both test animals (ie. Rainbow Trout and Daphnia magna). The 4 sites were; North American Salt, Sifto Division in Goderich, The Canadian Salt Company, Windsor, Reiss Lime Company of Canada Ltd., Spragge and Beachvilime, East plant, in Beachville.

For 7 sites, samples were sometimes lethal to one or both test animals. These sites were; Essroc Canada Inc., Picton, Lafarge Canada Inc., Bath, St. Marys Cement Corporation in St. Marys and Bowmanville, Unimin Canada Ltd., Nephton, Domtar Inc., Caledonia and CGC Inc. in Hagersville.

For the remaining 35 sites, samples were normally non-lethal to both animals.

The most probable causes for toxicity in this sector are the high levels of suspended solids, pH and dissolved solids.

I INTRODUCTION

The Municipal-Industrial Strategy for Abatement (MISA) is a Ministry of the Environment regulatory programme aimed at the virtual elimination of persistent toxic contaminants from all discharges into Ontario's waterways.

The programme entails two phases. Under the first phase of the programme, effluent monitoring regulations were promulgated for nine industrial sectors requiring twelve months of intensive monitoring of effluents in each sector. The Industrial Minerals Sector as one of the nine industrial sectors began its regulatory monitoring period on August 1, 1990.

The Salt Category of the Metal and Salt Mining Sector, which started the monitoring programme on February 1, 1990, was transferred to the Industrial Minerals Sector in March, 1992.

The second phase involves the development and implementation of effluent limit regulations using the information gathered under the effluent monitoring regulations together with information on Best Available Technology Economically Achievable (BATEA).

This report summarizes the information for the Industrial Minerals Sector generated for the twelve months of regulatory effluent monitoring covering the period from February 1, 1990 to January 31, 1991 (O. Reg. 491/89 as amended to O.Reg. 44/90) for the salt plants and from August 1, 1990 to July 31, 1991 (O. Reg. 91/90) for all other plants.

II SECTOR OVERVIEW

Industrial minerals are those non-fuel minerals and rocks that are mined, processed and utilized for purposes other than for their metal content (with the exception of magnesium).

Two classes of industrial minerals are recognized in Ontario; <u>non-metallic minerals</u>, and <u>structural materials</u>.

Non-metallic minerals and rocks that are covered in this report include; graphite, gypsum, nepheline syenite, salt, and talc.

Structural materials consist of naturally occurring sand and gravel, and crushed stone (limestone). Also included are materials that are manufactured from rocks and sediments (lime, cement and clay brick).

In addition to the non-metallic minerals and structural materials, the production of magnesium from dolomite is also included in this sector.

Industrial mineral operations that involve the production and direct discharge of wastewater to Ontario's surface waters were divided into ten categories:

1) Cement
2) Chemical Lime
3) Magnesium
4) Clay and Shale
5) Graphite
6) Quarries (crushed limestone, traprock, etc.)
7) Sand and Gravel
8) Salt
9) Gypsum
10) Talc

Fig. 1 shows the location of the Industrial Minerals Sector plants in the province.

III DESCRIPTION OF THE MONITORING PROGRAM

The effluent data reported in this document were submitted under the MISA program as a regulatory requirement for the Industrial Minerals Sector and the Metal and Salt Mining Sector (salt data only) under a "how to" general regulation for all the sectors, O. Reg. 695/88 and later amended to O. Reg. 533/89 and two sector-specific regulations, O. Reg. 491/89 as amended to O. Reg. 44/90 and O. Reg. 91/90.

The Development Documents for the Effluent Monitoring Regulation for the Industrial Minerals Sector (ISBN: 0-7729-6655-9, April 1990, Queen's Printer)[1] and the Metal and Salt Mining Sector (ISBN: 0-7729-6119-0, September 1989, Queen's Printer)[2] provide the technical rationale for the selection of parameters and the monitoring frequencies.

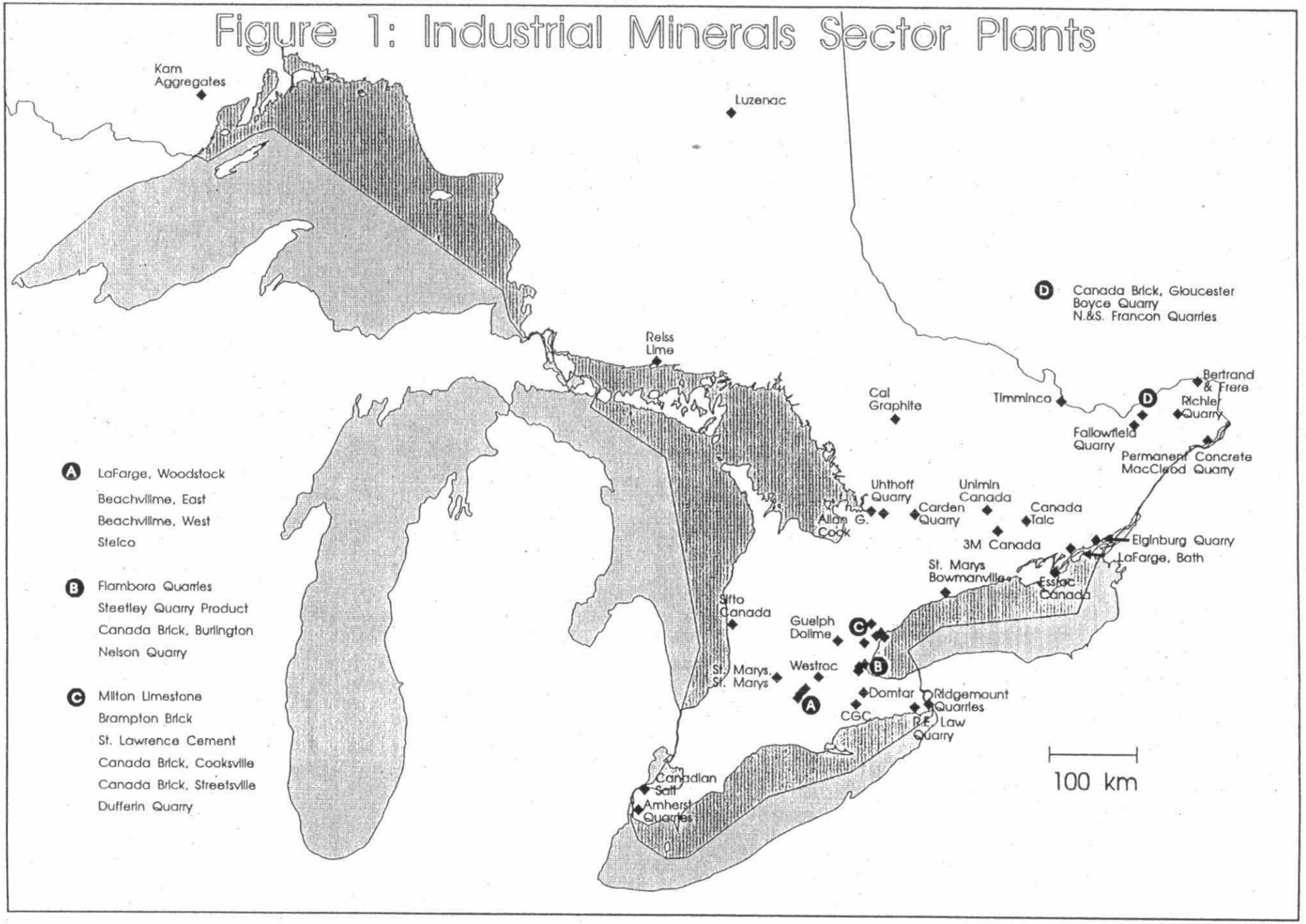
Plants monitored in the sector are shown in Table 1. This table also provides information on the types of wastewater discharges.

The common sources of wastewater at industrial mineral plants are:

- the mine and its associated facilities, and
- the manufacturing facilities.

The manufacturing facilities are generally involved in production processes which do not substantially modify the chemistry of the initial raw materials. Water is used in these facilities mainly for cooling and dust suppression.

Figure 1: Industrial Minerals Sector Plants



For the purposes of the Effluent Monitoring Regulation, the effluents within the Industrial Minerals Sector were classified according to the effluent source and potential for contamination.

In the **Effluent Monitoring Regulation;**

- effluent discharged from a manufacturing or processing plant was called, **"cement plant effluent"**,**"lime plant effluent"**, **"graphite plant effluent"**, **"gypsum plant effluent"**, or **"magnesium plant effluent"**; and

- underground minewater was called **"minewater effluent"**;

- quarry water was called **"quarry water effluent"**;

- run-off from storm events which was collected and discharged through a drainage system such as a culvert or open channel, was called **"storm water effluent"**;

- wastewater which was generated from the washing of sand or stone, was called **"wash water effluent"**; and

- effluent discharged from a fine salt or evaporating plant was called **"process effluent"**.

The sector parameter list, Table 2, consists of the Effluent Monitoring Priority Pollutants List (EMPPL)[3,4] and sector specific parameters. Effluents were analyzed for the sector list of 150 parameters.

IV DATABASE DESCRIPTION

Data Submission

Industry reported the monitoring data to the Ministry's Regional Offices by means of a customized computer diskette as part of the MISA Data Entry System (MIDES). The data were then transferred into the Ministry's computer system after checking for completeness.

Database Size

The quantity of data collected during the monitoring year is as follows:

Type of Effluent	Number of Data Points
Mine water	6293
Quarry Water	8776
Wash Water	359
Plant Effluent	16934
Storm Water	1647
QA/QC	39156
Ministry Audit Data	10180
Flow Measurement	7104
TOTAL	90449

Data Validation

The purpose was to confirm the integrity of the information contained in the effluent monitoring database. Data validation involved the analysis of multiple records, sample type codes, remark codes, attached reports, outliers, and data completeness. Various ministry data reports were reviewed at the plant level for correction. Data entry error corrections were carried out through the Ministry's Regional Offices.

Quality Assurance/Quality Control (QA/QC) Data Assessment

The purpose of the QA/QC data assessment was to determine the quality of the effluent monitoring data and their suitability for use in the development of effluent limits.

The QA/QC data assessment confirmed that the majority of the effluent data are of reliable quality and are satisfactory for use in the development of effluent limits.

V DISCUSSION OF RESULTS

During the monitoring period, ministry staff collected inspection or audit samples. The results were compared with the analytical data collected by the plants. There was good agreement between the two data sources.

The monitoring data are summarized in various forms in Tables and Appendices of this report as follows:

Selected/Found Parameters

Parameters were listed as selected or "found" unless a proportion of 0.9 of the concentration results had values less than the RMDL at 95% confidence level. This is known as the 90/10 Edit Rule. For the purposes of this report **selected** means **found** by the 90/10 Edit Rule.

40 parameters were "found" in the sector effluents. Some parameters were found at one or two plant sites. After the QA/QC evaluation, 34 parameters remained on the found list for all effluents in the industrial minerals sector. In Table 3, the selected parameters are classified under routine monitoring (ie. daily, thrice weekly, weekly or monthly frequencies), characterization monitoring (ie. quarterly, semi-annual or annual frequencies) and stormwater monitoring.

Flow Data

A summary of all flow data generated during the monitoring period is shown in Table 4. All flows are given in cubic meters per day and are effluent specific. In Table 4, "N" means the "number of samples" that the data are based on. "C.V." means "coefficient of variance" (standard deviation divided by the mean) and is expressed as a percentage.

Effluent Discharge

Some of the plants in the sector did not operate throughout the year. Table 5 indicates the total number of days that effluent was discharged at each property.

Total Annual Loadings

Total annual loadings of selected parameters are indicated in Table 6. Most of the organic chemicals selected were found at one plant site.

Long Term Average (LTA) Concentration and Loading (Appendix 1)

Appendix 1 is a summary of the concentrations (LTA) and loadings (LTA) for all selected parameters at each plant site on an effluent specific basis. Loadings are expressed as "average (LTA) loading (kg/day)" and "annual loading (kg/year)".

In Appendix 1, an asterisk (*) near a parameter name indicates a QA/QC problem with the parameter. The nature of the problem is given in Appendix 2, QA/QC Report.

In addition, Appendix 1 gives the total number of days of effluent discharge at the specific property involved.

Data Quality Evaluation Report (Appendix 2)

Appendix 2 describes the QA/QC procedures that were applied to the final Industrial Minerals Sector database. All remark codes, QA/QC procedures and results are explained in detail. Table C of the QA/QC report gives the total list of parameters selected for consideration in the Industrial Minerals Sector prior to data quality evaluation. In all, 40 parameters were selected. Table G gives the final list of parameters selected after data quality evaluation procedures had been applied. 34 parameters are found in the final list.

Acute Lethality Data (Appendix 3)

A report entitled," Acute Lethality Data for Ontario's Industrial Minerals Sector Effluents Covering the Period from May 1990 to August 1991", was produced by Westlake, Lee, Poirier, Abernethy and Mueller of the Aquatic Toxicity Unit of the Water Resources Branch of the Ontario Ministry of the Environment in August 1992. The "Summary" of the report is given in this appendix.

Provincial Water Quality Objectives and Guidelines (Appendix 4)

Table 1 in the current edition of the Ontario Ministry of the Environment publication "Water Management" (revised May, 1984) lists the Provincial Water Quality Objectives and Guidelines that were available at that time. Since then, a number of additional Provincial Water Quality Objectives and Guidelines have been developed. The current version of Table 1 (July 1992) forms Appendix 4. In Appendix 4, PWQO means Provincial Water Quality Objective; PWQG means Provincial Water Quality Guideline and the word "Proposed" indicates that the candidate Objective or Guideline is currently undergoing external peer review and has not yet been approved by the Ministry of the Environment and could be revised.

This table may be used in data interpretation.

VI REFERENCES

1. Ontario Ministry of the Environment, "The Development Document for the Effluent Monitoring Regulation for the Industrial Minerals Sector," April 1990, ISBN 0-7729-6655-9, Queen's Printer.

2. Ontario Ministry of the Environment, "The Development Document for the Effluent Monitoring Regulation for the Ontario Mineral Industry Sector: Group A," September 1989, ISBN 0-7729-6119-0, Queen's Printer.

3. Ontario Ministry of the Environment, "The Effluent Monitoring Priority Pollutants List (1987)," ISBN 0-7729-2784-7, Queen's Printer.

4. Ontario Ministry of the Environment, "The Effluent Monitoring Priority Pollutants List - 1988 Update," (March, 1989), ISBN 0-7729-5450-X, Queens's Printer.

TABLE 1
MISA Industrial Minerals Sector
Company List

Company Identification	Stream Identification		
Cement Category			
1 – St. Lawrence Cement	CP	0100	Cement Plant Effluent
2 – LaFarge, Bath	CP	0200	Cement Plant Effluent
	QW	0300	Quarrywater Effluent
	SW	0400	Stormwater Effluent
3 – LaFarge, Woodstock	CP	0100	Cement Plant Effluent
	QW	0200	Quarrywater Effluent
4 – Essroc Canada Inc.	CP	0300	Cement Plant Effluent
	QW	0400	Quarrywater Effluent
5 – St. Marys, Bowmanville	CP	0100	Cement Plant Effluent
	QW	0200	Quarrywater Effluent
6 – St. Marys, St Marys	CP	0100	Cement Plant Effluent
	QW	0200	Quarrywater Effluent N
	SW	0400	Stormwater Effluent
	SW	0500	Stormwater Effluent CP
Chemical Lime/Magnesium Category			
7 – Stelco Inc.	LP	0100	Lime Plant Effluent
8 – Beachvilime Ltd., East	LP	0100	Lime Plant Effluent E
9 – Guelph Dolime	LP	0100	Lime Plant Effluent N
	LP	0200	Lime Plant Effluent S
10 – Reiss Lime Company Ltd.	LP	0100	Lime Plant Effluent
11 – Steetley Quarry Products	LP	0100	Lime Plant Effluent
12 – Beachvilime Ltd., West	LP	0100	Lime Plant Effluent W
13 – Timminco Ltd.	MP	0100	Magnesium Plant Effluent
	SW	0200	Stormwater Effluent
Graphite/Gypsum/Nepheline Syenite/Talc Category			
14 – Cal Graphite Corp.	GP	0100	Graphite Plant Effluent
15 – Westroc Industries Ltd.	MW	0100	Minewater Effluent
16 – CGC Inc.	MW	0100	Minewater
	GYP	0200	Gypsum Plant Effluent
17 – Domtar Inc.	MW	0100	Minewater Effluent
	GYP	0200	Gypsum Plant Effluent
	MW	0300	Minewater Effluent
	MW	0400	Minewater Effluent
18 – Unimin Canada Ltd.	PW	0100	Process Effluent
19 – Canada Talc Ltd.	MW	0100	Minewater Effluent
20 – Luzenac Inc.	MW	0100	Minewater Effluent
20 – Luzenac Inc.	PW	0200	Process Effluent
	RG	0300	Rain Gauge
Salt Category			
21 – Sifto Canada Inc.	PW	0100	Manhole 3A
	MW	0200	Minewater Effluent
	RG	0300	Rain Gauge
22 – The Canadian Salt Company	PW	0100	E–1 Main Sewer
	MW	0300	Mine Water Effluent
	RG	0400	Rain Gauge
	DC	0500	Dust Collector Effluent
	IW	0600	Intake Water
Clay and Shale Category			
23 – Brampton Brick Ltd.	SW	0100	Stormwater Effluent
24 – Canada Brick, Burlington	SW	0100	Stormwater Effluent
25 – Canada Brick, Cooksville	SW	0100	Stormwater Effluent – 1
25 – Canada Brick, Cooksville	SW	0200	Stormwater Effluent – 2
26 – Canada Brick, Gloucester	SW	0100	Stormwater Effluent
27 – Canada Brick, Streetsville	SW	0100	Stormwater Effluent
Quarries Category			
28 – 3M Canada Inc.	QW	0100	Quarrywater Effluent
29 – Amherst Quarries Ltd.	QW	0100	Quarrywater Effluent
30 – Boyce Quarry	QW	0100	Quarrywater Effluent
31 – Carden Quarry	QW	0100	Quarrywater Effluent
32 – Permanent Concrete Ltd.	QW	0100	Quarrywater Effluent
33 – Dufferin Quarry	QW	0100	Quarrywater Effluent
34 – Elginburg Quarry	QW	0100	Quarrywater Effluent
35 – Fallowfield Quarry	QW	0100	Quarrywater Effluent
36 – Flamboro Quarries Ltd.	QW	0100	Quarrywater Effluent
37 – N & S Francon Quarries	QW	0100	Quarrywater Effluent
38 – R.E. Law Quarry	QW	0100	Quarrywater Effluent
39 – Bertrand and Frere	QW	0100	Quarrywater Effluent
40 – MacCleod Quarry	QW	0100	Quarrywater Effluent
41 – Milton Limestone	QW	0100	Quarrywater Effluent
42 – Nelson Quarry	QW	0100	Quarrywater Effluent
42 – Nelson Quarry	WW	0200	Washwater Effluent
43 – Richier Quarry	QW	0100	Quarrywater Effluent
44 – Ridegemount Quarries Ltd.	QW	0100	Quarrywater Effluent
45 – Uhthoff Quarry	QW	0100	Quarrywater Effluent
46 – Allan G. Cook Ltd.	QW	0100	Quarrywater Effluent
Sand and Gravel Category			
47 – Kam Aggregates Ltd.	WW	0100	Washwater Effluent

TABLE 2
MISA Industrial Minerals Sector – Parameter List

ATG	Parameter	RMDL
01	COD	10 mg/L
02	Cyanide Total	0.005 mg/L
03	Hydrogen Ion (pH)	
06	Total phosphorus	0.1 mg/L
07	Specific conductance	5 uS/cm
08	Total suspended solids	5 mg/L
09	Silver	30 ug/L
	Aluminum	30 ug/L
	Beryllium	10 ug/L
	Cadmium	2 ug/L
	Cobalt	20 ug/L
	Chromium	20 ug/L
	Copper	10 ug/L
	Molybdenum	20 ug/L
	Nickel	20 ug/L
	Lead	30 ug/L
	Thallium	30 ug/L
	Vanadium	30 ug/L
	Zinc	10 ug/L
10	Arsenic	5 ug/L
	Antimony	5 ug/L
	Selenium	5 ug/L
11	Chromium (hexavalent)	10 ug/L
12	Mercury	0.1 ug/L
14	Phenolics (4AAP)	2 ug/L
15	Sulphide	0.02 ug/L
16	1,1,2,2–Tetrachloroethane	4.3 ug/L
	1,1,2–Trichloroethane	0.6 ug/L
	1,1–Dichloroethane	0.8 ug/L
	1,1–Dichloroethylene	2.8 ug/L
	1,2–Dichloroethane	0.8 ug/L
	1,2–Dichloropropane	0.9 ug/L
	Cis–1,3–Dichloropropylene	1.4 ug/L
	Trans–1,3–Dichloropropylene	1.4 ug/L
	Bromodichloromethane	0.8 ug/L
	Bromoform	3.7 ug/L
	Dibromochloromethane	1.1 ug/L
	Chloromethane	3.7 ug/L
	Chloroform	0.7 ug/L
	Carbon tetrachloride	1.3 ug/L
	Methylene chloride	1.3 ug/L
	Trans–1,2–Dichloroethylene	1.4 ug/L
	Trichlorofluoromethane	1 ug/L
	Tetrachloroethylene	1.1 ug/L
	Trichloroethylene	1.9 ug/L
	Vinyl chloride	4 ug/L
	1,2–Dichlorobenzene	1.4 ug/L
	1,3–Dichlorobenzene	1.1 ug/L
	1,4–Dichlorobenzene	1.7 ug/L
	Chlorobenzene	0.7 ug/L
	Ethylene dibromide	1 ug/L
	Bromomethane	3.7 ug/L

ATG	Parameter	RMDL
17	Styrene	0.5 ug/L
	Benzene	0.5 ug/L
	m–Xylene and p–Xylene	1.1 ug/L
	o–Xylene	0.5 ug/L
	Toluene	0.5 ug/L
18	Acrolein	4 ug/L
	Acrylonitrile	4.2 ug/L
19	Diphenylamine	14 ug/L
	2,4–Dinitrotoluene	0.8 ug/L
	2,6–Dinitrotoluene	0.7 ug/L
	4–Bromophenyl phenyl ether	0.3 ug/L
	4–Chlorophenyl phenyl ether	0.9 ug/L
	Bis(2–chloroethyl)ether	4.4 ug/L
	Bis(2–chloroethoxy)methane	3.5 ug/L
	Bis(2–chloroisopropyl)ether	2.2 ug/L
	Benzylbutylphthalate	0.6 ug/L
	Bis(2–ethylhexyl) phthalate	2.2 ug/L
	Camphene	3.5 ug/L
	Di–n–butyl phthalate	3.8 ug/L
	N–Nitrosodiphenylamine	14 ug/L
	N–Nitrosodi–n–propylamine	3.1 ug/L
	1–Chloronaphthalene	2.5 ug/L
	1–Methylnaphthalene	3.2 ug/L
	2–Chloronaphthalene	1.8 ug/L
	2–Methylnaphthalene	2.2 ug/L
	5–nitro, Acenaphthene	4.3 ug/L
	Acenaphthene	1.3 ug/L
	Acenaphthylene	1.4 ug/L
	Anthracene	1.2 ug/L
	Benz(a)anthracene	0.5 ug/L
	Benzo(a)pyrene	0.6 ug/L
	Benzo(b)fluoranthene	0.7 ug/L
	Benzo(k)fluoranthene	0.7 ug/L
	Chrysene	0.3 ug/L
	Dibenz(a,h)anthracene	1.3 ug/L
	Fluoranthene	0.4 ug/L
	Fluorene	1.7 ug/L
	Benzo(g,h,i)perylene	0.7 ug/L
	Indole	1.9 ug/L
	Indeno(1,2,3–cd)pyrene	1.3 ug/L
	Naphthalene	1.6 ug/L
	Perylene	1.5 ug/L
	Phenanthrene	0.4 ug/L
	Pyrene	0.4 ug/L
20	2,4–Dichlorophenol	1.7 ug/L
	2,4–Dimethylphenol	7.3 ug/L
	2,4–Dinitrophenol	42 ug/L
	2,6–Dichlorophenol	2 ug/L
	4,6–Dinitro–o–cresol	24 ug/L
	4–Nitrophenol	1.4 ug/L
	m–Cresol	3.4 ug/L
	o–Cresol	3.7 ug/L
	p–Cresol	3.5 ug/L

ATG	Parameter	RMDL
20	Phenol	2.4 ug/L
	2–Chlorophenol	3.7 ug/L
	2,3,4–Trichlorophenol	0.6 ug/L
	2,3,4,5–Tetrachlorophenol	0.4 ug/L
	2,3,4,6–Tetrachlorophenol	2.8 ug/L
	2,3,5–Trichlorophenol	1.3 ug/L
	2,3,5,6–Tetrachlorophenol	1.6 ug/L
	2,4,5–Trichlorophenol	1.3 ug/L
	2,4,6–Trichlorophenol	1.3 ug/L
	4–Chloro–3–methylphenol	1.5 ug/L
	Pentachlorophenol	1.3 ug/L
23	Hexachlorobutadiene	0.01 ug/L
	Hexachlorocyclopentadiene	0.01 ug/L
	1,2,3–Trichlorobenzene	0.01 ug/L
	1,2,3,4–Tetrachlorobenzene	0.01 ug/L
	1,2,3,5–Tetrachlorobenzene	0.01 ug/L
	1,2,4–Trichlorobenzene	0.01 ug/L
	1,2,4,5–Tetrachlorobenzene	0.01 ug/L
	Hexachlorobenzene	0.01 ug/L
	Hexachloroethane	0.01 ug/L
	Octachlorostyrene	0.01 ug/L
	Pentachlorobenzene	0.01 ug/L
	2,4,5–Trichlorotoluene	0.01 ug/L
24	2,3,7,8 TCDD	0.02 ng/L
	Total TCDD	0.02 ng/L
	Total TCDF	0.015 ng/L
	Total PCDD	0.02 ng/L
	Total PCDF	0.015 ng/L
	Total H6CDD	0.03 ng/L
	Total H6CDF	0.02 ng/L
	Total H7CDD	0.03 ng/L
	Total H7CDF	0.03 ng/L
	Octachlorodibenzo–p–dioxin	0.03 ng/L
	Octachlorodibenzofuran	0.03 ng/L
25	Oil and grease	1 mg/L
27	PCBT	0.1 ug/L
4a	Ammonia plus Ammonium	0.25 mg/L
	Total Kjeldahl Nitrogen	0.5 mg/L
4b	Nitrate+Nitrite	0.25 mg/L
5a	DOC	0.5 mg/L
5b	TOC, Total Organic Carbon	5 mg/L
98	Ftflow	m3/day
IM1	Chlorides	2 mg/L
IM2	Fibrous Chrysotile	
IM3	Fluoride	0.1 mg/L
IM4	Sulphates	5 mg/L
IM6	Thiocyanates, Filtered	5 mg/L
IM8	Cyanide (WAD)	0.005 mg/L
IM9	Cyanates, Filtered	5 mg/L
IM10	Dissolved Solids	20 mg/L

TABLE 3

MISA Industrial Minerals Sector
Parameters with Acceptable Data
Listed According to Number of Plant Sites Selected

ATG	Parameter	Routine Monitoring	Characterization Monitorng	Storm Water Monitoring
02	Cyanide Total	1	3	1
06	Total phosphorus	3	3	
08	Total suspended solids	37		8
09	Aluminum		16	4
	Cadmium	2		
	Cobalt		2	
	Copper	2		
	Molybdenum			2
	Nickel		3	
	Vanadium		2	
	Zinc	1	9	3
10	Arsenic	3		
14	Phenolics (4AAP)	15	1	1
15	Sulphide		6	3
17	Toluene		1	
19	Di–n–butyl phthalate		2	
	Phenanthrene		1	
20	2,4–Dimethylphenol	1		
	Pentachlorophenol		1	
	Phenol	1		
	m–Cresol	1		
	o–Cresol	1		
	p–Cresol	1		
25	Oil and grease	28		4
4a	Ammonia plus Ammonium	21	1	1
	Total Kjeldahl Nitrogen	2		
4b	Nitrate+Nitrite	2	15	6
5a	DOC		18	4
5b	TOC, Total Organic Carbon		2	
IM1	Chlorides	8	13	2
IM3	Fluoride			5
IM4	Sulphates	6	17	2
IM8	Cyanide (WAD)		1	
IM10	Dissolved Solids	2		

Routine Monitoring = Daily, Thrice Weekly, Weekly or Monthly Monitoring
Characterization Monitoring = Quarterly, Semi–annual or Annual Monitoring
Storm Water Monitoring = Any Parameters Selected for Storm Water Streams
Intake Streams are Not Counted

TABLE 4

Summary of Flow Data (m3/day) – MISA Industrial Minerals Sector

Company Identification	Control Point	N	Minimum	Median	Maximum	Mean	% C.V.	Standard Deviation
01 – St. Lawrence Cement	CP 0100	293	12200	16800	23800	17000	12.9	2200
02 – LaFarge, Bath	CP 0200	273	943	3070	24800	3200	53.3	1710
	QW 0300	225	8	269	4910	489	122	571
	SW 0400	3	38.4	864	864	589	81	477
03 – LaFarge, Woodstock	CP 0100	113	1.1	146	11800	619	234	1450
	QW 0200	241	1.05	1150	4890	1620	91.8	1480
04 – Essroc Canada Inc.	CP 0300	156	5490	7000	9730	7100	10.9	775
	QW 0400	203	54.5	2680	12200	2990	45.4	1360
05 – St. Marys, Bowmanville	CP 0100	289	233	3440	7090	3420	52.3	1790
	QW 0200	236	14.8	812	2370	926	71.4	661
06 – St. Marys, St Marys	CP 0100	280	349	4290	15700	4830	71.2	3440
	QW 0200	220	2080	8350	13800	8480	31.7	2690
	SW 0400	7	14.8	193	348	194	65.6	127
	SW 0500	11	172	295	740	343	55.1	189
07 – Steico Inc.	LP 0100	109	11900	20800	30100	21000	22.2	4660
08 – Beachvilime Ltd., East	LP 0100	157	6470	18900	43000	21100	41.1	8670
09 – Guelph Dolime	LP 0100	157	1480	1480	1480	1480	0	0
	LP 0200	157	6250	6250	6250	6250	0	0
10 – Reiss Lime Company Ltd.	LP 0100	77	106	505	1310	552	40.9	226
11 – Steetley Quarry Products	LP 0100	140	1130	9270	13400	8820	44.6	3930
12 – Beachvilime Ltd., West	LP 0100	156	7330	12800	29000	13900	26.8	3720
13 – Timminco Ltd.	MP 0100	130	151	2110	9610	2490	48.7	1210
	SW 0200	8	19.6	37.1	710	122	196	238
14 – Cal Graphite Corp.	GP 0100	139	1210	9050	35400	10500	69.6	7330
15 – Westroc Industries Ltd.	MW 0100	156	442	722	3270	1200	63.4	760
16 – CGC Inc.	MW 0100	154	400	3830	10700	4010	40.8	1630
	GYP 0200	154	460	4610	18500	5500	62.8	3450
17 – Domtar Inc.	MW 0100	40	19	190	470	199	48.8	97
	GYP 0200	155	250	4210	30000	4700	86.3	4060
	MW 0300	153	110	820	26500	1620	210	3400
	MW 0400	10	790	1090	1120	1040	11.8	122
18 – Unimin Canada Ltd.	PW 0100	83	3.12	285	1590	565	97.7	552
19 – Canada Talc Ltd.	MW 0100	147	251	2690	14100	4120	86.2	3550
20 – Luzenac Inc.	MW 0100	145	21.2	708	1600	633	65.1	412
	PW 0200	145	16.8	569	2010	516	66	340
21 – Sifto Canada Inc.	PW 0100	152	335	7790	12200	8180	22.6	1850
	MW 0200	148	12.2	71	135	71.2	43.2	30.7
22 – The Canadian Salt Company	PW 0100	160	198	2350	26800	11000	101	11100
	MW 0300	26	16	43	150	58	68.6	39.8
	DC 0500	76	400	400	400	400	0	0
	IW 0600	0						
23 – Brampton Brick Ltd.	SW 0100	3	251	547	718	505	46.8	236
24 – Canada Brick, Burlington	SW 0100	10	79	246	1080	306	93.6	287
25 – Canada Brick, Cooksville	SW 0100	9	52	155	2620	636	133	844
	SW 0200	8	13	611	3280	922	118	1080
26 – Canada Brick, Gloucester	SW 0100	5	60	1970	3910	2320	68.4	1590
27 – Canada Brick, Streetsville	SW 0100	12	62.2	348	2950	538	144	774
28 – 3M Canada Inc.	QW 0100	10	2	12	551	77.7	217	168
29 – Amherst Quarries Ltd.	QW 0100	51	459	1490	4150	1540	54.3	835
30 – Boyce Quarry	QW 0100	33	2860	2880	2880	2880	0.182	5.23
31 – Carden Quarry	QW 0100	40	172	172	1210	275	103	284
32 – Permanent Concrete Ltd.	QW 0100	46	8.38	1080	14100	1960	128	2510
33 – Dufferin Quarry	QW 0100	52	105	7200	17300	7570	65.9	4990
34 – Elginburg Quarry	QW 0100	7	19	480	2450	1080	104	1130
35 – Fallowfield Quarry	QW 0100	9	57.9	460	1960	663	92.4	613
36 – Flamboro Quarries Ltd.	QW 0100	52	85.2	743	6000	1920	119	2280
37 – N & S Francon Quarries	QW 0100	47	26.2	1350	5180	2020	77.1	1560
38 – R.E. Law Quarry	QW 0100	50	14000	14000	14400	14100	0.899	127
39 – Bertrand and Frere	QW 0100	15	26.8	218	3270	1150	120	1380
40 – MacCleod Quarry	QW 0100	22	78.4	398	3760	604	127	770
41 – Milton Limestone	QW 0100	52	34	1510	5060	1490	87.2	1300
42 – Nelson Quarry	QW 0100	49	1820	3920	9090	4390	39.5	1730
	WW 0200	52	447	2840	7180	2900	49.2	1430
43 – Richier Quarry	QW 0100	22	11.3	54	548	119	142	169
44 – Ridegemount Quarries Ltd.	QW 0100	32	2860	4580	4580	4380	12.5	548
45 – Uhthoff Quarry	QW 0100	51	7270	8060	11700	8790	17.2	1510
46 – Allan G. Cook Ltd.	QW 0100	41	4.9	175	642	284	83.5	237
47 – Kam Aggregates Ltd.	WW 0100	21	559	2120	7260	2770	59.6	1650

N = Number of Days Flow Measured
% C.V. = Coefficient of Variation in Percent [(Standard Deviation/Mean)x100]

TABLE 5

MISA Industrial Minerals Sector

NUMBER OF DAYS OF EFFLUENT DISCHARGE

	Company	CtrlPt.	Aug–90	Sep–90	Oct–90	Nov–90	Dec–90	Jan–91	Feb–91	Mar–91	Apr–91	May–91	Jun–91	Jul–91	Total
Cement Category															
1	– St. Lawrence Cement	CP 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
2	– LaFarge, Bath	CP 0200	31	30	31	30	31	31	28	31	30	31	30	31	365
2	– LaFarge, Bath	QW 0300	31	30	31	30	31	31	28	31	30	31	30	31	365
2	– LaFarge, Bath	SW 0400	Not Available												
3	– LaFarge, Woodstock	CP 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
3	– LaFarge, Woodstock	QW 0200	18	17	14	20	14	12	11	13	19	20	14	9	181
4	– Essroc Canada Inc.	CP 0300	31	30	31	30	31	31	28	31	30	31	30	31	365
4	– Essroc Canada Inc.	QW 0400	31	30	31	30	31	31	28	31	30	31	30	31	365
5	– St. Marys, Bowmanville	CP 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
5	– St. Marys, Bowmanville	QW 0200	18	25	21	30	31	31	13	24	30	31	29	21	304
6	– St. Marys, St Marys	CP 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
6	– St. Marys, St Marys	QW 0200	31	30	31	30	31	31	28	31	30	31	30	31	365
6	– St. Marys, St Marys	SW 0400	Not Available												
6	– St. Marys, St Marys	SW 0500	Not Available												
Chemical Lime/Magnesium Category															
7	– Stelco Inc.	LP 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
8	– Beachvilime Ltd., East	LP 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
9	– Guelph Dolime	LP 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
9	– Guelph Dolime	LP 0200	31	30	31	30	31	31	28	31	30	31	30	31	365
10	– Reiss Lime Company Ltd.	LP 0100	24	30	30	24	24	26	28	24	24	25	30	19	308
11	– Steetley Quarry Products	LP 0100	22	24	27	25	17	31	28	31	30	31	30	21	317
12	– Beachvilime Ltd., West	LP 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
13	– Timminco Ltd.	MP 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
13	– Timminco Ltd.	SW 0200	31	30	31	30	31	31	28	31	30	31	30	31	365
Graphite/Gypsum/Nepheline Syenite/Calcite/Talc Category															
14	– Cal Graphite Corp.	GP 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
15	– Westroc Industries Ltd.	MW 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
16	– CGC Inc.	MW 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
16	– CGC Inc.	GYP 0200	31	30	31	30	31	31	28	31	30	31	30	31	365
17	– Domtar Inc.	MW 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
17	– Domtar Inc.	GYP 0200	31	30	31	30	31	31	28	31	30	31	30	31	365
17	– Domtar Inc.	MW 0300	31	30	31	30	31	31	28	31	30	31	30	31	365
17	– Domtar Inc.	MW 0400	0	5	30	0	0	0	0	0	0	14	30	31	110
18	– Unimin Canada Ltd.	PW 0100	17	17	17	16	16	16	16	16	16	16	16	16	195
19	– Canada Talc Ltd.	MW 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
20	– Luzenac Inc.	MW 0100	31	30	31	30	31	31	28	31	30	31	30	30	364
20	– Luzenac Inc.	PW 0200	31	30	31	30	31	31	28	31	30	31	30	30	364

TABLE 5 (continued)

MISA Industrial Minerals Sector

NUMBER OF DAYS OF EFFLUENT DISCHARGE

Company	CtrlPt.	Feb-90	Mar-90	Apr-90	May-90	Jun-90	Jul-90	Aug-90	Sep-90	Oct-90	Nov-90	Dec-90	Jan-91	Total
Salt Category														
21 – Sifto Canada Inc.	PW 0100	24	29	28	25	28	26	29	27	27	27	30	25	325
21 – Sifto Canada Inc.	MW 0200	28	31	30	31	30	31	31	30	31	30	31	31	365
22 – The Canadian Salt Company	PW 0100	28	31	30	31	30	31	31	30	31	30	31	31	365
22 – The Canadian Salt Company	MW 0300	1	2	1	3	3	2	1	2	1	4	2	2	24
22 – The Canadian Salt Company	DC 0500	14	0	0	0	0	0	5	30	31	30	31	31	172

Company	CtrlPt.	Aug-90	Sep-90	Oct-90	Nov-90	Dec-90	Jan-91	Feb-91	Mar-91	Apr-91	May-91	Jun-91	Jul-91	
Clay and Shale Category														
23 – Brampton Brick Ltd.	SW 0100	2.7	0.6	4.5	0	0	0	0	0	0	0	0	0	7.8
24 – Canada Brick, Burlington	SW 0100	31	30	31	30	20	0	0	18	30	31	30	31	282
25 – Canada Brick, Cooksville	SW 0100	15	30	31	0	0	0	0	18	30	31	0	0	155
25 – Canada Brick, Cooksville	SW 0200	15	30	31	0	0	0	0	18	30	31	0	0	155
26 – Canada Brick, Gloucester	SW 0100	0	15	31	15	0	0	0	0	0	21	15	0	97
27 – Canada Brick, Streetsville	SW 0100	31	30	31	30	31	31	28	31	30	31	30	31	365
Quarries Category														
28 – 3M Canada Inc.	QW 0100	0	0	0	0	0	0	0	15	15	12	3	3	48
29 – Amherst Quarries Ltd.	QW 0100	31	30	31	30	27	31	28	31	30	31	30	31	361
30 – Boyce Quarry	QW 0100	31	30	31	30	0	0	21	31	30	30	4	0	238
31 – Carden Quarry	QW 0100	5	8	8	5	5	4	7	10	8	6	4	4	74
32 – Permanent Concrete Ltd.	QW 0100	31	30	31	30	31	31	28	31	30	31	30	13	347
33 – Dufferin Quarry	QW 0100	25	23	30	30	31	30	28	31	30	27	24	22	331
34 – Elginburg Quarry	QW 0100	0	0	3	0	0	0	0	3	4	0	0	0	10
35 – Fallowfield Quarry	QW 0100	5	5	9	2	0	0	0	0	14	1	0	0	36
36 – Flamboro Quarries Ltd.	QW 0100	18	26	24	17	22	19	21	27	26	19	15	15	249
37 – N & S Francon Quarries	QW 0100	27	17	23	25	29	25	28	31	30	31	23	4	293
38 – R.E. Law Quarry	QW 0100	20	20	20	20	20	10	10	20	20	20	20	20	220
39 – Bertrand and Frere	QW 0100	2	2	2	17	4	0	0	7	27	14	6	2	83
40 – MacCleod Quarry	QW 0100	12	12	5	8	3	0	0	0	7	8	14	20	89
41 – Milton Limestone	QW 0100	8	6	9	8	10	13	12	18	17	13	11	8	133
42 – Nelson Quarry	QW 0100	31	22	30	30	31	31	28	31	30	31	30	31	356
42 – Nelson Quarry	WW 0200	31	30	31	30	31	31	28	31	30	31	30	31	365
43 – Richier Quarry	QW 0100	8	5	14	6	0	0	0	0	0	2	4	4	43
44 – Ridegemount Quarries Ltd.	QW 0100	8	9	14	14	0	30	26	31	30	31	5	0	198
45 – Uhthoff Quarry	QW 0100	31	13	20	22	31	31	28	31	29	31	30	31	328
46 – Allan G. Cook Ltd.	QW 0100	18	14	31	25	20	25	28	31	30	31	8	16	277
47 – Kam Aggregates Ltd.	WW 0100	25	24	25	0	0	0	0	0	0	0	26	25	125

TABLE 6

Total Annual Loadings (kg/year) for the MISA Industrial Minerals Sector – Selected Parameters

ATG	Parameter	A	B	C	D	E	F	G	Total Industrial Minerals Sector
02	Cyanide Total	–	99.1	–	43	–	–	–	142
06	Total phosphorus	6.29	–	958	26.7	–	–	–	991
08	Total suspended solids	745000	633000	303000	146000	133000	374000	10400	2210000
09	Aluminum	2780	4130	4300	4810	1600	1600	–	17600
	Cadmium	–	–	6.32	–	–	–	–	6.32
	Cobalt	–	31.4	7.86	–	–	–	–	39.2
	Copper	–	1.33	40.2	–	–	–	–	41.5
	Molybdenum	–	–	–	–	9.08	9.08	–	9.08
	Nickel	–	660	133	–	–	–	–	793
	Vanadium	–	2440	–	–	–	–	–	2440
	Zinc	111	207	305	111	23.3	23.3	–	758
10	Arsenic	–	–	47.6	–	–	–	–	47.6
14	Phenolics (4AAP)	47.8	126	104	59.3	–	16.7	2.48	357
15	Sulphide	195	860	8690	–	24.9	24.9	–	9790
17	Toluene	–	–	–	0.0183	–	–	–	0.0183
19	Di–n–butyl phthalate	–	–	6.84	1.77	–	–	–	8.61
	Phenanthrene	–	0.246	–	–	–	–	–	0.246
20	2,4–Dimethylphenol	–	10.1	–	–	–	–	–	10.1
	Pentachlorophenol	–	–	–	0.0657	–	–	–	0.0657
	Phenol	–	37.3	–	–	–	–	–	37.3
	m–Cresol	–	13.5	–	–	–	–	–	13.5
	o–Cresol	–	18.1	–	–	–	–	–	18.1
	p–Cresol	–	17.2	–	–	–	–	–	17.2
25	Oil and grease	24500	31500	16100	9440	528	20800	1060	103000
4a	Ammonia plus Ammonium	2490	21700	3370	780	–	1870	–	30200
	Total Kjeldahl Nitrogen	–	–	–	3220	–	–	–	3220
4b	Nitrate+Nitrite	17100	43000	29700	6260	1270	1270	–	97400
5a	DOC	45200	80800	70600	82500	3280	3280	–	282000
5b	TOC, Total Organic Carbon	–	–	–	3440	–	–	–	3440
IM1	Chlorides	2060000	2710000	1950000	16500000	–	–	–	23300000
IM1	Dissolved Solids	–	–	–	30700000	–	–	–	30700000
IM3	Fluoride	–	–	–	–	905	905	–	905
IM4	Sulphates	1890000	9270000	7920000	2910000	–	–	–	22000000
IM8	Cyanide (WAD)	–	–	–	4.23	–	–	–	4.23

A = Cement Category
B = Chemical Lime/Magnesium Category
C = Graphite/Gypsum/Nepheline Syenite/Talc Category
D = Salt Category
E = Clay and Shale Category
F = Quarries Category
G = Sand and Gravel Category

Appendix 1

Long Term Average
Concentration and Loading Tables

1 – St. Lawrence Cement

CP 0100 – Cement Plant Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			150	8.26		
07	Specific conductance	5 uS/cm	2	2	1330 uS/cm		
08	Total suspended solids	5 mg/L	121	151	20.9 mg/L	374	136000
09	Aluminum	30 ug/L	2	2	98.5 ug/L	1.65	602
14	Phenolics (4AAP)	2 ug/L	5	12	1.58 ug/L	0.0288	10.5
25	Oil and grease	1 mg/L	44	152	1.15 mg/L	20.3	7400
4b	Nitrate+Nitrite	0.25 mg/L	2	2	0.57 mg/L	9.71	3540
5a	DOC	0.5 mg/L	2	2	1.9 mg/L	32.1	11700
98	Ftflow			293	17000 m3/day		
IM1	Chlorides	2 mg/L	12	12	42.5 mg/L	735	268000
IM4	Sulphates	5 mg/L	12	12	60.3 mg/L	1050	384000
	Number of Days of Effluent Discharge			365			

2 – LaFarge, Bath

CP 0200 – Cement Plant Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			144	8.32		
07	Specific conductance	5 uS/cm	2	2	295 uS/cm		
08	Total suspended solids	5 mg/L	71	144	10.6 mg/L	33.1	12100
09	Aluminum	30 ug/L	2	2	393 ug/L	0.151	55.2
25	Oil and grease	1 mg/L	23	143	1.14 mg/L	4.05	1480
4b	Nitrate+Nitrite	0.25 mg/L	2	2	0.29 mg/L	1.3	475
5a	DOC	0.5 mg/L	2	2	3 mg/L	16	5830
98	Ftflow			273	3200 m3/day		
IM1	Chlorides	2 mg/L	12	12	21.5 mg/L	118	43200
IM4	Sulphates	5 mg/L	12	12	36.7 mg/L	206	75100
	Number of Days of Effluent Discharge			365			

2 – LaFarge, Bath

QW 0300 – Quarrywater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			144	8.07		
06	Total phosphorus	0.1 mg/L	2	2	0.155 mg/L	0.0172	6.29
07	Specific conductance	5 uS/cm	2	2	1400 uS/cm		
08	Total suspended solids	5 mg/L	134	143	55.9 mg/L	25.8	9400
09	Aluminum	30 ug/L	2	2	1820 ug/L	0.394	144
14	Phenolics (4AAP)	2 ug/L	7	12	2.18 ug/L	0.00042	0.153
25	Oil and grease	1 mg/L	23	144	1.06 mg/L	0.418	153
4a	Ammonia plus Ammonium	0.25 mg/L	8	12	0.483 mg/L	0.147	53.7
4b	Nitrate+Nitrite	0.25 mg/L	2	2	6.6 mg/L	0.836	305
5a	DOC	0.5 mg/L	2	2	1.1 mg/L	0.16	58.4
98	Ftflow			225	469 m3/day		
IM1	Chlorides	2 mg/L	2	2	285 mg/L	30.8	11200
IM4	Sulphates	5 mg/L	2	2	910 mg/L	102	37300
	Number of Days of Effluent Discharge			365			

2 – LaFarge, Bath

SW 0400 – Stormwater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			3	8.13		
07	Specific conductance	5 uS/cm	3	3	1410 uS/cm		
08	Total suspended solids	5 mg/L	3	3	34 mg/L	18.9	
25	Oil and grease	1 mg/L	2	3	1.33 mg/L	0.877	
4b	Nitrate+Nitrite	0.25 mg/L	2	3	0.4 mg/L	0.247	
98	Ftflow			3	589 m3/day		
IM1	Chlorides	2 mg/L	3	3	183 mg/L	114	
IM4	Sulphates	5 mg/L	3	3	300 mg/L	141	
	Number of Days of Effluent Discharge			Not Available			

3 – LaFarge, Woodstock
CP 0100 – Cement Plant Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			142	8.29		
07	Specific conductance	5 uS/cm	1	1	1510 uS/cm		
08	Total suspended solids	5 mg/L	133	143	232 mg/L	93.4	34100
09	Aluminum	30 ug/L	2	2	140 ug/L	0.0374	13.6
	Zinc	10 ug/L	2	2	11.5 ug/L	0.00205	0.748
14	Phenolics (4AAP)	2 ug/L	9	12	3.1 ug/L	0.00311	1.14
15	Sulphide	0.02 mg/L	2	2	0.05 mg/L	0.00691	2.52
25	Oil and grease	1 mg/L	113	143	4.28 mg/L	1.49	544
4b	Nitrate+Nitrite	0.25 mg/L	2	2	1.25 mg/L	0.256	93.5
5a	DOC	0.5 mg/L	2	2	1.9 mg/L	0.276	101
98	Ftflow			113	619 m3/day		
IM1	Chlorides	2 mg/L	12	12	117 mg/L	83.3	30400
IM4	Sulphates	5 mg/L	12	12	639 mg/L	362	132000
	Number of Days of Effluent Discharge			365			

3 – LaFarge, Woodstock
QW 0200 – Quarrywater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			112	8.26		
07	Specific conductance	5 uS/cm	1	1	1530 uS/cm		
08	Total suspended solids	5 mg/L	111	112	103 mg/L	180	32500
09	Aluminum	30 ug/L	2	2	755 ug/L	0.403	72.9
14	Phenolics (4AAP)	2 ug/L	6	10	2.52 ug/L	0.00479	0.867
15	Sulphide	0.02 mg/L	2	2	0.04 mg/L	0.00575	1.04
25	Oil and grease	1 mg/L	35	112	1.43 mg/L	2.4	435
4a	Ammonia plus Ammonium	0.25 mg/L	7	11	0.375 mg/L	0.545	98.6
4b	Nitrate+Nitrite	0.25 mg/L	2	2	0.96 mg/L	0.432	78.1
5a	DOC	0.5 mg/L	2	2	1.65 mg/L	0.432	78.1
98	Ftflow			241	1620 m3/day		
IM1	Chlorides	2 mg/L	2	2	97 mg/L	28.2	5100
IM4	Sulphates	5 mg/L	2	2	495 mg/L	132	24000
	Number of Days of Effluent Discharge			181			

4 – Essroc Canada Inc.
CP 0300 – Cement Plant Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			149	8.41		
07	Specific conductance	5 uS/cm	2	2	290 uS/cm		
08	Total suspended solids	5 mg/L	129	149	31.7 mg/L	228	83100
09	Aluminum	30 ug/L	2	2	190 ug/L	1.27	463
14	Phenolics (4AAP)	2 ug/L	10	12	2.5 ug/L	0.0175	6.38
25	Oil and grease	1 mg/L	44	149	1.45 mg/L	10.3	3750
5a	DOC	0.5 mg/L	2	2	4.05 mg/L	26.8	9780
98	Ftflow			156	7100 m3/day		
IM1	Chlorides	2 mg/L	12	12	14.8 mg/L	103	37400
IM4	Sulphates	5 mg/L	12	12	20.6 mg/L	143	52000
	Number of Days of Effluent Discharge			365			

4 – Essroc Canada Inc.
QW 0400 – Quarrywater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			119	8.88		
07	Specific conductance	5 uS/cm	2	2	1500 uS/cm		
08	Total suspended solids	5 mg/L	86	119	31.5 mg/L	73.8	26900
09	Aluminum	30 ug/L	2	2	145 ug/L	0.521	190
14	Phenolics (4AAP)	2 ug/L	9	12	5.45 ug/L	0.0159	5.8
25	Oil and grease	1 mg/L	27	121	1.28 mg/L	3.47	1270
4a	Ammonia plus Ammonium	0.25 mg/L	9	12	0.586 mg/L	1.6	585
4b	Nitrate+Nitrite	0.25 mg/L	2	2	6.15 mg/L	20.2	7390
5a	DOC	0.5 mg/L	2	2	3.45 mg/L	14	5100
98	Ftflow			203	2990 m3/day		
IM1	Chlorides	2 mg/L	2	2	225 mg/L	790	289000
IM4	Sulphates	5 mg/L	2	2	300 mg/L	992	362000
	Number of Days of Effluent Discharge			365			

5 – St. Marys, Bowmanville
CP 0100 – Cement Plant Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			145	8.25		
07	Specific conductance	5 uS/cm	2	2	370 uS/cm		
08	Total suspended solids	5 mg/L	143	145	115 mg/L	487	178000
09	Aluminum	30 ug/L	2	2	290 ug/L	0.99	361
14	Phenolics (4AAP)	2 ug/L	6	12	3.03 ug/L	0.0095	3.47
25	Oil and grease	1 mg/L	53	145	1.33 mg/L	5	1830
4b	Nitrate+Nitrite	0.25 mg/L	2	2	0.505 mg/L	1.76	641
5a	DOC	0.5 mg/L	2	2	2.1 mg/L	7.75	2830
98	Ftflow			289	3420 m3/day		
IM1	Chlorides	2 mg/L	12	12	37.8 mg/L	96.3	35100
IM4	Sulphates	5 mg/L	12	12	41.7 mg/L	112	40900
	Number of Days of Effluent Discharge			365			

5 – St. Marys, Bowmanville
QW 0200 – Quarrywater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			120	7.79		
07	Specific conductance	5 uS/cm	2	2	12300 uS/cm		
08	Total suspended solids	5 mg/L	121	121	202 mg/L	203	61700
09	Aluminum	30 ug/L	2	2	1450 ug/L	1.54	469
14	Phenolics (4AAP)	2 ug/L	10	11	39.1 ug/L	0.0319	9.71
15	Sulphide	0.02 mg/L	2	2	0.075 mg/L	0.0919	27.9
25	Oil and grease	1 mg/L	94	119	3.2 mg/L	2.84	862
4a	Ammonia plus Ammonium	0.25 mg/L	12	12	4.19 mg/L	3.46	1050
4b	Nitrate+Nitrite	0.25 mg/L	2	2	2.15 mg/L	2.43	739
5a	DOC	0.5 mg/L	2	2	2.85 mg/L	3.11	944
98	Ftflow			236	926 m3/day		
IM1	Chlorides	2 mg/L	2	2	3950 mg/L	3640	1110000
IM4	Sulphates	5 mg/L	2	2	170 mg/L	206	62600
	Number of Days of Effluent Discharge			304			

6 – St. Marys, St Marys
CP 0100 – Cement Plant Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			152	8.35		
07	Specific conductance	5 uS/cm	2	2	1050 uS/cm		
08	Total suspended solids	5 mg/L	92	153	18.4 mg/L	88.6	32300
09	Aluminum	30 ug/L	2	2	385 ug/L	1.13	413
	Zinc	10 ug/L	2	2	36.5 ug/L	0.11	40.3
14	Phenolics (4AAP)	2 ug/L	6	12	2.52 ug/L	0.00639	2.33
15	Sulphide	0.02 mg/L	2	2	0.025 mg/L	0.0964	35.2
25	Oil and grease	1 mg/L	43	152	1.24 mg/L	5.72	2090
4b	Nitrate+Nitrite	0.25 mg/L	2	2	0.905 mg/L	2.72	992
5a	DOC	0.5 mg/L	2	2	1.85 mg/L	6.68	2440
98	Ftflow			280	4830 m3/day		
IM1	Chlorides	2 mg/L	12	12	76.8 mg/L	369	135000
IM4	Sulphates	5 mg/L	12	12	222 mg/L	910	332000
	Number of Days of Effluent Discharge			365			

6 – St. Marys, St Marys
QW 0200 – Quarrywater Effluent N
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			141	8.17		
07	Specific conductance	5 uS/cm	2	2	715 uS/cm		
08	Total suspended solids	5 mg/L	108	139	45.1 mg/L	382	139000
09	Zinc	10 ug/L	2	2	24 ug/L	0.191	69.8
14	Phenolics (4AAP)	2 ug/L	7	12	3 ug/L	0.0204	7.43
15	Sulphide	0.02 mg/L	2	2	0.045 mg/L	0.352	128
25	Oil and grease	1 mg/L	47	139	1.57 mg/L	12.8	4670
4a	Ammonia plus Ammonium	0.25 mg/L	5	12	0.231 mg/L	1.92	700
4b	Nitrate+Nitrite	0.25 mg/L	2	2	0.955 mg/L	7.8	2850
5a	DOC	0.5 mg/L	2	2	2.15 mg/L	17.4	6360
98	Ftflow			220	8480 m3/day		
IM1	Chlorides	2 mg/L	2	2	32.5 mg/L	259	94400
IM4	Sulphates	5 mg/L	2	2	135 mg/L	1080	393000
	Number of Days of Effluent Discharge			365			

6 – St. Marys, St Marys
SW 0400 – Stormwater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			6	8.32		
07	Specific conductance	5 uS/cm	7	7	410 uS/cm		
08	Total suspended solids	5 mg/L	4	6	117 mg/L	38.2	
4b	Nitrate+Nitrite	0.25 mg/L	7	7	4.23 mg/L	1.02	
98	Ftflow			7	194 m3/day		
IM1	Chlorides	2 mg/L	7	7	12.7 mg/L	2.48	
IM4	Sulphates	5 mg/L	7	7	20 mg/L	3.74	
	Number of Days of Effluent Discharge			Not Available			

6 – St. Marys, St Marys
SW 0500 – Stormwater Effluent CP
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			10	10.5		
07	Specific conductance	5 uS/cm	11	11	2050 uS/cm		
08	Total suspended solids	5 mg/L	10	10	215 mg/L	85.5	
14	Phenolics (4AAP)	2 ug/L	6	11	3.94 ug/L	0.00172	
4b	Nitrate+Nitrite	0.25 mg/L	10	11	1.14 mg/L	0.393	
98	Ftflow			11	343 m3/day		
IM1	Chlorides	2 mg/L	10	11	209 mg/L	89.9	
IM4	Sulphates	5 mg/L	11	11	179 mg/L	63.5	
	Number of Days of Effluent Discharge			Not Available			

7 – Stelco Inc.
LP 0100 – Lime Plant Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			109	8.06		
07	Specific conductance	5 uS/cm	2	2	716 uS/cm		
08	Total suspended solids	5 mg/L	66	109	7.02 mg/L	150	54600
09	Aluminum	30 ug/L	2	2	240 ug/L	6.25	2280
	Nickel	20 ug/L	2	2	59 ug/L	1.55	565
	Vanadium	30 ug/L	2	2	251 ug/L	6.53	2380
25	Oil and grease	1 mg/L	20	109	1.06 mg/L	22.1	8080
4a	Ammonia plus Ammonium	0.25 mg/L	11	12	0.327 mg/L	7.35	2680
5a	DOC	0.5 mg/L	2	2	1.15 mg/L	30.4	11100
98	Ftflow			109	21000 m3/day		
IM1	Chlorides	2 mg/L	2	2	99 mg/L	2610	954000
IM4	Sulphates	5 mg/L	2	2	248 mg/L	6520	2380000
	Number of Days of Effluent Discharge			365			

8 – Beachvilime Ltd., East
LP 0100 – Lime Plant Effluent E
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
02	Cyanide Total	0.005 mg/L	2	2	0.015 mg/L	0.262	95.7
03	Hydrogen ion (pH)			157	8.72		
07	Specific conductance	5 uS/cm	2	2	1450 uS/cm		
08	Total suspended solids	5 mg/L	132	157	23.8 mg/L	563	205000
09	Aluminum	30 ug/L	2	2	155 ug/L	2.73	996
14	Phenolics (4AAP)	2 ug/L	2	2	13 ug/L	0.242	88.2
25	Oil and grease	1 mg/L	55	157	1.17 mg/L	26.3	9590
4a	Ammonia plus Ammonium	0.25 mg/L	9	12	0.333 mg/L	6.68	2440
4b	Nitrate+Nitrite	0.25 mg/L	2	2	3.55 mg/L	63.6	23200
5a	DOC	0.5 mg/L	2	2	2.7 mg/L	47.2	17200
98	Ftflow			157	21100 m3/day		
IM1	Chlorides	2 mg/L	2	2	67 mg/L	1160	425000
IM4	Sulphates	5 mg/L	2	2	675 mg/L	12300	4490000
	Number of Days of Effluent Discharge			365			

9 – Guelph Dolime

LP 0100 – Lime Plant Effluent N

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			156	7.67		
07	Specific conductance	5 uS/cm	2	2	1550 uS/cm		
08	Total suspended solids	5 mg/L	51	155	8.38 mg/L	12.4	4540
09	Zinc	10 ug/L	2	2	68.5 ug/L	0.102	37.1
25	Oil and grease	1 mg/L	52	154	1 mg/L	1.49	543
4a	Ammonia plus Ammonium	0.25 mg/L	11	13	0.291 mg/L	0.431	157
4b	Nitrate+Nitrite	0.25 mg/L	2	2	1.75 mg/L	2.6	947
5a	DOC	0.5 mg/L	2	2	2.35 mg/L	3.49	1270
98	Ftflow			157	1480 m3/day		
IM1	Chlorides	2 mg/L	2	2	275 mg/L	408	149000
IM4	Sulphates	5 mg/L	2	2	135 mg/L	200	73100
	Number of Days of Effluent Discharge			365			

9 – Guelph Dolime

LP 0200 – Lime Plant Effluent S

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			155	7.97		
07	Specific conductance	5 uS/cm	2	2	1300 uS/cm		
08	Total suspended solids	5 mg/L	122	154	23.4 mg/L	146	53500
09	Aluminum	30 ug/L	2	2	97 ug/L	0.606	221
	Zinc	10 ug/L	2	2	64.5 ug/L	0.403	147
25	Oil and grease	1 mg/L	55	157	1.1 mg/L	6.86	2500
4a	Ammonia plus Ammonium	0.25 mg/L	11	13	0.368 mg/L	2.3	841
4b	Nitrate+Nitrite	0.25 mg/L	2	2	1.35 mg/L	8.41	3070
5a	DOC	0.5 mg/L	2	2	2.15 mg/L	13.4	4910
98	Ftflow			157	6250 m3/day		
IM1	Chlorides	2 mg/L	2	2	160 mg/L	1000	365000
IM4	Sulphates	5 mg/L	2	2	190 mg/L	1190	434000
	Number of Days of Effluent Discharge			365			

10 – Reiss Lime Company Ltd.
LP 0100 – Lime Plant Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
02	Cyanide Total	0.005 mg/L	2	2	0.02 mg/L	0.0111	3.4
03	Hydrogen ion (pH)			127	10.4		
07	Specific conductance	5 uS/cm	2	2	899 uS/cm		
08	Total suspended solids	5 mg/L	113	127	19.1 mg/L	8.76	2700
09	Aluminum	30 ug/L	2	2	815 ug/L	0.45	139
	Copper	10 ug/L	4	12	7.92 ug/L	0.00431	1.33
	Vanadium	30 ug/L	2	2	331 ug/L	0.183	56.2
14	Phenolics (4AAP)	2 ug/L	7	12	339 ug/L	0.124	38.1
15	Sulphide	0.02 mg/L	2	2	5.06 mg/L	2.79	860
16	1,2–Dichloroethane *	0.8 ug/L	2	2	0.82 ug/L	0.00045	0.139
19	Phenanthrene	0.4 ug/L	2	2	1.45 ug/L	0.0008	0.246
20	2,4–Dimethylphenol	7.3 ug/L	9	12	55.1 ug/L	0.0328	10.1
	Phenol *	2.4 ug/L	12	12	216 ug/L	0.121	37.3
	m–Cresol *	3.4 ug/L	12	12	84.1 ug/L	0.044	13.5
	o–Cresol	3.7 ug/L	12	12	106 ug/L	0.0588	18.1
	p–Cresol	3.5 ug/L	11	12	94.4 ug/L	0.0558	17.2
25	Oil and grease	1 mg/L	101	122	3.28 mg/L	1.62	498
4b	Nitrate+Nitrite	0.25 mg/L	2	2	1.68 mg/L	0.928	286
5a	DOC	0.5 mg/L	2	2	6.35 mg/L	3.51	1080
98	Ftflow			77	552 m3/day		
	Number of Days of Effluent Discharge			308			

* Parameters with QA/QC concerns. Explanation in MISA Industrial Minerals Sector Data Quality Evaluation Report (Appendix 2).

11 – Steetley Quarry Products
LP 0100 – Lime Plant Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			143	7.13		
07	Specific conductance	5 uS/cm	2	2	1480 uS/cm		
08	Total suspended solids	5 mg/L	108	143	11.2 mg/L	103	32600
25	Oil and grease	1 mg/L	58	143	1.44 mg/L	12.6	3990
4a	Ammonia plus Ammonium	0.25 mg/L	5	16	0.597 mg/L	5.15	1630
4b	Nitrate+Nitrite	0.25 mg/L	2	2	1.53 mg/L	12	3800
98	Ftflow			140	8820 m3/day		
IM1	Chlorides	2 mg/L	2	2	163 mg/L	1390	441000
IM4	Sulphates	5 mg/L	2	2	351 mg/L	3110	985000
	Number of Days of Effluent Discharge			317			

12 – Beachvilime Ltd., West
LP 0100 – Lime Plant Effluent W
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			156	7.97		
07	Specific conductance	5 uS/cm	2	2	915 uS/cm		
08	Total suspended solids	5 mg/L	112	156	54.5 mg/L	767	280000
09	Aluminum	30 ug/L	2	2	100 ug/L	1.35	492
25	Oil and grease	1 mg/L	46	142	1.19 mg/L	17.2	6270
4a	Ammonia plus Ammonium	0.25 mg/L	6	11	0.282 mg/L	3.84	1400
4b	Nitrate+Nitrite	0.25 mg/L	2	2	2.4 mg/L	32.1	11700
5a	DOC	0.5 mg/L	2	2	6.45 mg/L	83.4	30500
98	Ftflow			156	13900 m3/day		
IM1	Chlorides	2 mg/L	2	2	78.5 mg/L	1030	376000
IM4	Sulphates	5 mg/L	2	2	190 mg/L	2500	911000
	Number of Days of Effluent Discharge			365			

13 – Timminco Ltd.
MP 0100 – Magnesium Plant Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			158	7.69		
07	Specific conductance	5 uS/cm	2	2	894 uS/cm		
09	Cobalt	20 ug/L	2	2	25 ug/L	0.0859	31.4
	Nickel	20 ug/L	2	2	70 ug/L	0.259	94.6
	Zinc	10 ug/L	2	2	15 ug/L	0.0623	22.7
20	4–Nitrophenol *	1.4 ug/L	2	2	5 ug/L	0.0185	6.76
	Pentachlorophenol *	1.3 ug/L	2	2	2.6 ug/L	0.00883	3.22
4a	Ammonia plus Ammonium	0.25 mg/L	10	13	10.8 mg/L	34.3	12500
5a	DOC	0.5 mg/L	2	2	9.74 mg/L	40.5	14800
98	Ftflow			130	2490 m3/day		
	Number of Days of Effluent Discharge			365			

* Parameters with QA/QC concerns. Explanation in MISA Industrial Minerals Sector Data Quality Evaluation Report (Appendix 2).

13 – Timminco Ltd.
SW 0200 – Stormwater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
02	Cyanide Total	0.005 mg/L	7	12	0.0129 mg/L	0.00091	0.332
03	Hydrogen ion (pH)			12	8.07		
08	Total suspended solids	5 mg/L	6	12	10.4 mg/L	3.45	1260
4a	Ammonia plus Ammonium	0.25 mg/L	12	12	1.57 mg/L	0.136	49.6
98	Ftflow			8	122 m3/day		
	Number of Days of Effluent Discharge			365			

14 – Cal Graphite Corp.
GP 0100 – Graphite Plant Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			139	6.43		
07	Specific conductance	5 uS/cm	2	2	187 uS/cm		
08	Total suspended solids	5 mg/L	68	138	11.3 mg/L	144	52400
09	Copper	10 ug/L	4	13	9.31 ug/L	0.11	40.2
	Zinc	10 ug/L	12	13	59.2 ug/L	0.707	258
14	Phenolics (4AAP)	2 ug/L	12	13	18.9 ug/L	0.228	83.4
25	Oil and grease	1 mg/L	81	135	1.51 mg/L	16	5860
98	Ftflow			139	10500 m3/day		
IM4	Sulphates	5 mg/L	2	2	50.9 mg/L	417	152000
	Number of Days of Effluent Discharge			365			

15 – Westroc Industries Ltd.
MW 0100 – Minewater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			156	7.87		
07	Specific conductance	5 uS/cm	2	2	9410 uS/cm		
08	Total suspended solids	5 mg/L	97	156	10.5 mg/L	13.9	5090
09	Zinc	10 ug/L	2	2	15 ug/L	0.0227	8.29
14	Phenolics (4AAP)	2 ug/L	12	12	35.8 ug/L	0.0558	20.4
15	Sulphide	0.02 mg/L	2	2	8.38 mg/L	22.6	8260
19	Di–n–butyl phthalate	3.8 ug/L	2	2	11.4 ug/L	0.0187	6.84
25	Oil and grease	1 mg/L	151	156	12.8 mg/L	16.9	6170
4a	Ammonia plus Ammonium	0.25 mg/L	12	12	4.01 mg/L	5.98	2180
4b	Nitrate+Nitrite	0.25 mg/L	2	2	4.94 mg/L	13.1	4770
98	Ftflow			156	1200 m3/day		
IM1	Chlorides	2 mg/L	2	2	2550 mg/L	4500	1640000
IM4	Sulphates	5 mg/L	2	2	1060 mg/L	3090	1130000
	Number of Days of Effluent Discharge			365			

16 – CGC Inc.
MW 0100 – Minewater
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			157	7.91		
07	Specific conductance	5 uS/cm	2	2	2350 uS/cm		
08	Total suspended solids	5 mg/L	130	157	17.6 mg/L	102	37300
09	Aluminum	30 ug/L	2	2	844 ug/L	3.54	1290
	Zinc	10 ug/L	2	2	12 ug/L	0.0449	16.4
25	Oil and grease	1 mg/L	22	156	1.07 mg/L	4.37	1600
4a	Ammonia plus Ammonium	0.25 mg/L	7	12	0.324 mg/L	1.31	479
4b	Nitrate+Nitrite	0.25 mg/L	2	2	2.6 mg/L	10.2	3730
5a	DOC	0.5 mg/L	2	2	2.65 mg/L	8.69	3170
98	Ftflow			154	4010 m3/day		
IM1	Chlorides	2 mg/L	2	2	31.5 mg/L	116	42200
IM4	Sulphates	5 mg/L	2	2	1250 mg/L	4580	1670000
	Number of Days of Effluent Discharge			365			

16 – CGC Inc.
GYP 0200 – Gypsum Plant Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			157	7.89		
07	Specific conductance	5 uS/cm	2	2	2500 uS/cm		
08	Total suspended solids	5 mg/L	152	157	39.5 mg/L	236	86000
09	Aluminum	30 ug/L	2	2	135 ug/L	0.402	147
25	Oil and grease	1 mg/L	24	155	1.16 mg/L	5.79	2110
4a	Ammonia plus Ammonium	0.25 mg/L	2	2	0.61 mg/L	1.67	609
4b	Nitrate+Nitrite	0.25 mg/L	2	2	2.6 mg/L	7.48	2730
5a	DOC	0.5 mg/L	2	2	1.25 mg/L	3.88	1420
98	Ftflow			154	5500 m3/day		
IM1	Chlorides	2 mg/L	2	2	36 mg/L	106	38600
IM4	Sulphates	5 mg/L	2	2	1350 mg/L	3860	1410000
	Number of Days of Effluent Discharge			365			

17 – Domtar Inc.
MW 0100 – Minewater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			109	7.78		
07	Specific conductance	5 uS/cm	2	2	3100 uS/cm		
08	Total suspended solids	5 mg/L	92	109	42.7 mg/L	2.84	1040
14	Phenolics (4AAP)	2 ug/L	6	12	1.67 ug/L	0.00034	0.124
15	Sulphide	0.02 mg/L	2	2	0.075 mg/L	0.018	6.57
25	Oil and grease	1 mg/L	56	107	2.24 mg/L	0.232	84.6
4a	Ammonia plus Ammonium	0.25 mg/L	10	12	3.61 mg/L	0.262	95.7
4b	Nitrate+Nitrite	0.25 mg/L	2	2	9.6 mg/L	1.88	688
5a	DOC	0.5 mg/L	2	2	1.55 mg/L	0.345	126
98	Ftflow			40	199 m3/day		
IM1	Chlorides	2 mg/L	2	2	155 mg/L	31.5	11500
IM4	Sulphates	5 mg/L	2	2	1550 mg/L	337	123000
	Number of Days of Effluent Discharge			365			

17 – Domtar Inc.
GYP 0200 – Gypsum Plant Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			157	7.96		
06	Total phosphorus	0.1 mg/L	2	2	0.12 mg/L	1.05	385
07	Specific conductance	5 uS/cm	2	2	2050 uS/cm		
08	Total suspended solids	5 mg/L	145	157	29 mg/L	139	50800
09	Aluminum	30 ug/L	2	2	670 ug/L	6.52	2380
15	Sulphide	0.02 mg/L	2	2	0.135 mg/L	1.06	388
5a	DOC	0.5 mg/L	2	2	5.2 mg/L	47.8	17400
98	Ftflow			152	4330 m3/day		
IM1	Chlorides	2 mg/L	2	2	51.5 mg/L	466	170000
IM4	Sulphates	5 mg/L	2	2	975 mg/L	8370	3060000
	Number of Days of Effluent Discharge			365			

17 – Domtar Inc.
MW 0300 – Minewater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			156	7.94		
07	Specific conductance	5 uS/cm	2	2	1600 uS/cm		
08	Total suspended solids	5 mg/L	140	156	31.3 mg/L	94.2	34400
09	Aluminum	30 ug/L	2	2	560 ug/L	0.802	293
15	Sulphide	0.02 mg/L	2	2	0.055 mg/L	0.0981	35.8
4b	Nitrate+Nitrite	0.25 mg/L	2	2	2.47 mg/L	2.74	1000
5a	DOC	0.5 mg/L	2	2	7.5 mg/L	11.4	4170
98	Ftflow			150	1190 m3/day		
IM1	Chlorides	2 mg/L	2	2	63.5 mg/L	107	39000
IM4	Sulphates	5 mg/L	2	2	665 mg/L	1040	378000
	Number of Days of Effluent Discharge			365			

17 – Domtar Inc.
MW 0400 – Minewater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			29	7.84		
08	Total suspended solids	5 mg/L	28	29	118 mg/L	60.4	6640
14	Phenolics (4AAP)	2 ug/L	2	2	24 ug/L	0.0248	2.73
25	Oil and grease	1 mg/L	27	29	3.82 mg/L	2.42	266
98	Ftflow			10	1040 m3/day		
	Number of Days of Effluent Discharge			110			

18 – Unimin Canada Ltd.
PW 0100 – Process Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			83	8.61		
07	Specific conductance	5 uS/cm	1	1	253 uS/cm		
08	Total suspended solids	5 mg/L	42	82	47.1 mg/L	53	10300
14	Phenolics (4AAP)	2 ug/L	5	12	4.88 ug/L	0.00277	0.54
98	Ftflow			83	565 m3/day		
	Number of Days of Effluent Discharge			195			

19 – Canada Talc Ltd.
MW 0100 – Minewater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			146	8.12		
07	Specific conductance	5 uS/cm	2	2	800 uS/cm		
08	Total suspended solids	5 mg/L	49	146	9.41 mg/L	43.1	15700
09	Cadmium	2 ug/L	5	14	3.16 ug/L	0.0155	5.64
	Nickel	20 ug/L	2	2	45 ug/L	0.366	133
10	Antimony *	5 ug/L	2	2	6 ug/L	0.0394	14.4
	Arsenic	5 ug/L	12	14	18 ug/L	0.0656	23.9
17	Toluene *	0.5 ug/L	2	2	0.55 ug/L	0.0036	1.31
20	4–Nitrophenol *	1.4 ug/L	2	2	5 ug/L	0.0328	12
	Pentachlorophenol *	1.3 ug/L	2	2	2 ug/L	0.0131	4.79
4b	Nitrate+Nitrite	0.25 mg/L	2	2	4.95 mg/L	43.5	15900
5a	DOC	0.5 mg/L	2	2	11.1 mg/L	97.1	35400
98	Ftflow			147	4120 m3/day		
	Number of Days of Effluent Discharge			365			

* Parameters with QA/QC concerns. Explanation in MISA Industrial Minerals Sector Data Quality Evaluation Report (Appendix 2).

20 – Luzenac Inc.
MW 0100 – Minewater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			144	8.68		
06	Total phosphorus	0.1 mg/L	2	2	1.56 mg/L	1.58	574
07	Specific conductance	5 uS/cm	2	2	388 uS/cm		
09	Cadmium	2 ug/L	4	12	4.2 ug/L	0.00186	0.677
	Cobalt	20 ug/L	2	2	20 ug/L	0.0216	7.86
	Zinc	10 ug/L	2	2	30 ug/L	0.0365	13.3
10	Arsenic	5 ug/L	12	12	82.2 ug/L	0.0603	21.9
17	Toluene *	0.5 ug/L	2	2	0.55 ug/L	0.0006	0.218
20	4–Nitrophenol *	1.4 ug/L	2	2	5 ug/L	0.0054	1.97
	Pentachlorophenol *	1.3 ug/L	2	2	2 ug/L	0.00216	0.786
5a	DOC	0.5 mg/L	2	2	13.7 mg/L	18.6	6780
98	Ftflow			145	633 m3/day		
	Number of Days of Effluent Discharge			364			

* Parameters with QA/QC concerns. Explanation in MISA Industrial Minerals Sector Data Quality Evaluation Report (Appendix 2).

20 – Luzenac Inc.
PW 0200 – Process Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			142	8.32		
07	Specific conductance	5 uS/cm	2	2	467 uS/cm		
08	Total suspended solids	5 mg/L	45	143	16.9 mg/L	8.19	2980
09	Aluminum	30 ug/L	2	2	765 ug/L	0.513	187
	Zinc	10 ug/L	2	2	35 ug/L	0.0249	9.05
10	Arsenic	5 ug/L	9	12	8.17 ug/L	0.00476	1.73
17	Toluene *	0.5 ug/L	2	2	0.55 ug/L	0.0004	0.146
20	4–Nitrophenol *	1.4 ug/L	2	2	5 ug/L	0.00359	1.31
	Pentachlorophenol *	1.3 ug/L	2	2	2 ug/L	0.00143	0.521
4b	Nitrate+Nitrite	0.25 mg/L	2	2	3.56 mg/L	2.43	884
5a	DOC	0.5 mg/L	2	2	7.84 mg/L	5.58	2030
98	Ftflow			145	516 m3/day		
	Number of Days of Effluent Discharge			364			

* Parameters with QA/QC concerns. Explanation in MISA Industrial Minerals Sector Data Quality Evaluation Report (Appendix 2).

21 – Sifto Canada Inc.
PW 0100 – Manhole 3A
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
February 1, 1990 to January 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
01	COD *	10 mg/L	3	4	35.3 mg/L	307	99900
03	Hydrogen ion (pH)			150	7.77		
08	Total suspended solids	5 mg/L	77	152	22.3 mg/L	182	59300
09	Zinc *	10 ug/L	3	4	32.5 ug/L	0.314	102
25	Oil and grease *	1 mg/L	54	152	1.28 mg/L	10.4	3370
4a	Ammonia plus Ammonium	0.25 mg/L	6	12	0.216 mg/L	1.87	609
	Total Kjeldahl Nitrogen	0.5 mg/L	4	12	0.367 mg/L	3.21	1040
5a	DOC	0.5 mg/L	4	4	21.5 mg/L	192	62300
98	Ftflow			152	8180 m3/day		
IM1	Chlorides	2 mg/L	152	152	4460 mg/L	34100	11100000
IM10	Dissolved Solids	20 mg/L	12	12	6730 mg/L	57600	18700000
IM4	Sulphates	5 mg/L	4	4	795 mg/L	7370	2400000
IM6	Thiocyanates, Filtered *	5 mg/L	3	4	163 mg/L	1310	425000
	Number of Days of Effluent Discharge			325			

* Parameters with QA/QC concerns. Explanation in MISA Industrial Minerals Sector Data Quality Evaluation Report (Appendix 2).

21 – Sifto Canada Inc.
MW 0200 – Minewater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
February 1, 1990 to January 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
01	COD *	10 mg/L	2	2	2860 mg/L	144	52700
03	Hydrogen ion (pH)			150	7.66		
06	Total phosphorus	0.1 mg/L	9	12	0.633 mg/L	0.0406	14.8
08	Total suspended solids	5 mg/L	151	151	350 mg/L	22.9	8370
09	Aluminum	30 ug/L	2	2	95 ug/L	0.00443	1.62
	Zinc	10 ug/L	2	2	215 ug/L	0.0113	4.13
14	Phenolics (4AAP)	2 ug/L	10	12	15.8 ug/L	0.00117	0.427
17	Toluene	0.5 ug/L	2	2	0.9 ug/L	0.00004	0.0146
19	Di–n–butyl phthalate	3.8 ug/L	2	2	76 ug/L	0.00483	1.76
20	Pentachlorophenol	1.3 ug/L	2	2	4.05 ug/L	0.00018	0.0657
25	Oil and grease	1 mg/L	150	150	249 mg/L	15.8	5780
4a	Ammonia plus Ammonium	0.25 mg/L	12	12	2.37 mg/L	0.167	61
	Total Kjeldahl Nitrogen	0.5 mg/L	12	12	3.68 mg/L	0.254	92.9
4b	Nitrate+Nitrite	0.25 mg/L	12	12	2.36 mg/L	0.154	56.1
5a	DOC	0.5 mg/L	2	2	180 mg/L	6.63	2420
5b	TOC, Total Organic Carbon	5 mg/L	2	2	193 mg/L	7.15	2610
98	Ftflow			146	71.2 m3/day		
IM1	Chlorides	2 mg/L	151	151	35900 mg/L	2420	883000
IM9	Cyanates, Filtered *	5 mg/L	2	2	750 mg/L	34.3	12500
IM10	Dissolved Solids	20 mg/L	12	12	46300 mg/L	3160	1150000
IM4	Sulphates	5 mg/L	2	2	1750 mg/L	87.4	31900
IM6	Thiocyanates, Filtered *	5 mg/L	2	2	750 mg/L	34.3	12500
	Number of Days of Effluent Discharge			365			

* Parameters with QA/QC concerns. Explanation in MISA Industrial Minerals Sector Data Quality Evaluation Report (Appendix 2).

22 – The Canadian Salt Company
PW 0100 – E–1 Main Sewer
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
February 1, 1990 to January 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			159	8.01		
08	Total suspended solids	5 mg/L	121	159	13.4 mg/L	171	62500
09	Aluminum	30 ug/L	4	4	733 ug/L	13.1	4790
14	Phenolics (4AAP)	2 ug/L	8	12	15.9 ug/L	0.16	58.4
4a	Total Kjeldahl Nitrogen	0.5 mg/L	7	12	0.545 mg/L	5.56	2030
4b	Nitrate+Nitrite	0.25 mg/L	12	12	4.91 mg/L	16.6	6050
5a	DOC	0.5 mg/L	4	4	2.88 mg/L	46.4	16900
98	Ftflow			159	11000 m3/day		
IM1	Chlorides	2 mg/L	159	159	1090 mg/L	6190	2260000
IM10	Dissolved Solids	20 mg/L	26	26	2170 mg/L	17400	6350000
IM4	Sulphates	5 mg/L	4	4	58.8 mg/L	1190	433000
	Number of Days of Effluent Discharge			365			

22 – The Canadian Salt Company
MW 0300 – Mine Water Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
February 1, 1990 to January 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
01	COD *	10 mg/L	2	2	61100 mg/L	2640	63400
02	Cyanide Total	0.005 mg/L	2	2	0.19 mg/L	0.00908	0.218
03	Hydrogen ion (pH)			26	7.09		
06	Total phosphorus	0.1 mg/L	9	11	0.379 mg/L	0.023	0.552
08	Total suspended solids	5 mg/L	26	26	47.9 mg/L	2.58	61.9
09	Zinc	10 ug/L	2	2	183 ug/L	0.00797	0.191
10	Antimony *	5 ug/L	2	2	7.5 ug/L	0.00035	0.0084
	Arsenic *	5 ug/L	2	2	22.5 ug/L	0.00106	0.0254
14	Phenolics (4AAP)	2 ug/L	10	11	22.8 ug/L	0.00126	0.0302
25	Oil and grease	1 mg/L	25	26	6.77 mg/L	0.407	9.77
4a	Ammonia plus Ammonium	0.25 mg/L	11	11	6.41 mg/L	0.32	7.69
	Total Kjeldahl Nitrogen	0.5 mg/L	9	11	3.3 mg/L	0.158	3.79
4b	Nitrate+Nitrite	0.25 mg/L	11	11	45.1 mg/L	2.16	51.9
5a	DOC	0.5 mg/L	2	2	11.1 mg/L	0.56	13.4
98	Ftflow			26	58 m3/day		
IM1	Chlorides	2 mg/L	26	26	100000 mg/L	5450	131000
IM10	Dissolved Solids	20 mg/L	11	11	162000 mg/L	7500	180000
IM4	Sulphates	5 mg/L	2	2	4100 mg/L	204	4890
	Number of Days of Effluent Discharge			24			

* Parameters with QA/QC concerns. Explanation in MISA Industrial Minerals Sector Data Quality Evaluation Report (Appendix 2).

22 – The Canadian Salt Company
DC 0500 – Dust Collector Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
February 1, 1990 to January 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
01	COD *	10 mg/L	2	2	11900 mg/L	4740	815000
02	Cyanide Total	0.005 mg/L	6	6	0.622 mg/L	0.249	42.8
03	Hydrogen ion (pH)			76	7.25		
06	Total phosphorus	0.1 mg/L	3	6	0.165 mg/L	0.0659	11.3
08	Total suspended solids	5 mg/L	76	76	228 mg/L	91.3	15700
09	Aluminum	30 ug/L	2	2	275 ug/L	0.11	18.9
	Zinc	10 ug/L	2	2	73.5 ug/L	0.0294	5.06
14	Phenolics (4AAP)	2 ug/L	6	6	5.83 ug/L	0.00233	0.401
25	Oil and grease	1 mg/L	59	76	4 mg/L	1.6	275
4a	Ammonia plus Ammonium	0.25 mg/L	6	6	1.49 mg/L	0.595	102
	Total Kjeldahl Nitrogen	0.5 mg/L	4	6	0.8 mg/L	0.32	55
4b	Nitrate+Nitrite	0.25 mg/L	6	6	1.5 mg/L	0.601	103
5a	DOC	0.5 mg/L	2	2	11.3 mg/L	4.5	774
5b	TOC, Total Organic Carbon	5 mg/L	2	2	12.1 mg/L	4.82	829
98	Ftflow			76	400 m3/day		
IM1	Chlorides	2 mg/L	68	68	31900 mg/L	12800	2190000
IM10	Dissolved Solids	20 mg/L	6	6	63300 mg/L	25300	4360000
IM4	Sulphates	5 mg/L	2	2	620 mg/L	248	42700
IM8	Cyanide (WAD)	0.005 mg/L	2	2	0.0615 mg/L	0.0246	4.23
	Number of Days of Effluent Discharge			172			

* Parameters with QA/QC concerns. Explanation in MISA Industrial Minerals Sector Data Quality Evaluation Report.

22 – The Canadian Salt Company
IW 0600 – Intake Water
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
February 1, 1990 to January 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			123	8.05	Flow Not Reported	
08	Total suspended solids	5 mg/L	99	122	19 mg/L		
4b	Nitrate+Nitrite	0.25 mg/L	5	5	1.09 mg/L		
IM1	Chlorides	2 mg/L	122	122	12 mg/L		
IM10	Dissolved Solids	20 mg/L	16	16	176 mg/L		

23 – Brampton Brick Ltd.
SW 0100 – Stormwater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			3	7.7		
07	Specific conductance	5 uS/cm	3	3	2130 uS/cm		
08	Total suspended solids	5 mg/L	3	3	60.7 mg/L	36.2	283
98	Ftflow			3	505 m3/day		
IM3	Fluoride	0.1 mg/L	3	3	1.8 mg/L	0.927	7.23
	Number of Days of Effluent Discharge			7.8			

24 – Canada Brick, Burlington
SW 0100 – Stormwater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			10	7.96		
07	Specific conductance	5 uS/cm	10	10	1310 uS/cm		
08	Total suspended solids	5 mg/L	10	10	283 mg/L	90.7	25600
09	Aluminum	30 ug/L	2	2	11500 ug/L	3.79	1070
	Zinc	10 ug/L	2	2	104 ug/L	0.0372	10.5
15	Sulphide	0.02 mg/L	2	2	0.08 mg/L	0.055	15.5
25	Oil and grease	1 mg/L	4	10	1.06 mg/L	0.315	88.8
4b	Nitrate+Nitrite	0.25 mg/L	2	2	1.64 mg/L	0.588	166
5a	DOC	0.5 mg/L	2	2	3.65 mg/L	2.61	735
98	Ftflow			10	306 m3/day		
IM3	Fluoride	0.1 mg/L	10	10	1.65 mg/L	0.509	144
	Number of Days of Effluent Discharge			282			

25 – Canada Brick, Cooksville

SW 0100 – Stormwater Effluent – 1

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			9	8.17		
07	Specific conductance	5 uS/cm	9	9	1270 uS/cm		
08	Total suspended solids	5 mg/L	9	9	69.4 mg/L	66	10200
09	Aluminum	30 ug/L	2	2	1150 ug/L	0.168	26
	Zinc	10 ug/L	2	2	175 ug/L	0.0179	2.77
15	Sulphide	0.02 mg/L	2	2	0.02 mg/L	0.00207	0.321
25	Oil and grease	1 mg/L	5	9	1.4 mg/L	0.652	101
4b	Nitrate+Nitrite	0.25 mg/L	2	2	0.645 mg/L	0.0732	11.3
5a	DOC	0.5 mg/L	2	2	4.45 mg/L	0.458	71
98	Ftflow			9	636 m3/day		
IM3	Fluoride	0.1 mg/L	9	9	1.34 mg/L	0.705	109
	Number of Days of Effluent Discharge			155			

* Parameters with QA/QC concerns. Explanation in MISA Industrial Minerals Sector Data Quality Evaluation Report.

25 – Canada Brick, Cooksville

SW 0200 – Stormwater Effluent – 2

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			9	8.12		
07	Specific conductance	5 uS/cm	9	9	1330 uS/cm		
08	Total suspended solids	5 mg/L	8	9	174 mg/L	372	57700
09	Aluminum	30 ug/L	2	2	5200 ug/L	0.124	19.3
	Molybdenum	20 ug/L	2	2	42.5 ug/L	0.00377	0.584
15	Sulphide	0.02 mg/L	2	2	0.025 mg/L	0.00471	0.73
4b	Nitrate+Nitrite	0.25 mg/L	2	2	1.45 mg/L	0.252	39.1
5a	DOC	0.5 mg/L	2	2	3.35 mg/L	0.394	61.1
98	Ftflow			8	922 m3/day		
IM3	Fluoride	0.1 mg/L	9	9	0.9 mg/L	0.993	154
	Number of Days of Effluent Discharge			155			

26 – Canada Brick, Gloucester

SW 0100 – Stormwater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			5	8.34		
07	Specific conductance	5 uS/cm	5	5	456 uS/cm		
08	Total suspended solids	5 mg/L	5	5	103 mg/L	194	18800
09	Aluminum	30 ug/L	2	2	1400 ug/L	2.69	261
	Molybdenum	20 ug/L	2	2	45.5 ug/L	0.0876	8.5
4b	Nitrate+Nitrite	0.25 mg/L	2	2	5.3 mg/L	10.2	985
5a	DOC	0.5 mg/L	2	2	8.35 mg/L	16.3	1580
98	Ftflow			5	2320 m3/day		
IM3	Fluoride	0.1 mg/L	5	5	0.44 mg/L	0.97	94.1
	Number of Days of Effluent Discharge			97			

27 – Canada Brick, Streetsville

SW 0100 – Stormwater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			12	7.71		
07	Specific conductance	5 uS/cm	12	12	428 uS/cm		
08	Total suspended solids	5 mg/L	11	12	48.4 mg/L	56	20400
09	Aluminum	30 ug/L	2	2	1480 ug/L	0.614	224
	Zinc	10 ug/L	2	2	65 ug/L	0.0274	9.98
15	Sulphide	0.02 mg/L	2	2	0.04 mg/L	0.0227	8.3
25	Oil and grease	1 mg/L	11	12	1.84 mg/L	0.926	338
4b	Nitrate+Nitrite	0.25 mg/L	2	2	0.415 mg/L	0.183	66.9
5a	DOC	0.5 mg/L	2	2	4.95 mg/L	2.27	829
98	Ftflow			12	538 m3/day		
IM3	Fluoride	0.1 mg/L	12	12	2.03 mg/L	1.09	397
	Number of Days of Effluent Discharge			365			

28 – 3M Canada Inc.
QW 0100 – Quarrywater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			10	8.13		
07	Specific conductance	5 uS/cm	1	1	680 uS/cm		
08	Total suspended solids	5 mg/L	7	10	9.02 mg/L	0.203	9.72
25	Oil and grease	1 mg/L	10	10	1.74 mg/L	0.0893	4.28
4a	Ammonia plus Ammonium	0.25 mg/L	4	5	0.926 mg/L	0.0161	0.77
98	Ftflow			10	77.7 m3/day		
	Number of Days of Effluent Discharge			48			

29 – Amherst Quarries Ltd.
QW 0100 – Quarrywater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			51	7.59		
07	Specific conductance	5 uS/cm	1	1	377 uS/cm		
08	Total suspended solids	5 mg/L	42	49	12.6 mg/L	19.5	7060
25	Oil and grease	1 mg/L	27	49	2.88 mg/L	4.32	1560
98	Ftflow			51	1540 m3/day		
	Number of Days of Effluent Discharge			361			

30 – Boyce Quarry
QW 0100 – Quarrywater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			34	8.12		
07	Specific conductance	5 uS/cm	1	1	1350 uS/cm		
98	Ftflow			33	2880 m3/day		
	Number of Days of Effluent Discharge			238			

31 – Carden Quarry
QW 0100 – Quarrywater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			39	7.92		
07	Specific conductance	5 uS/cm	1	1	2100 uS/cm		
08	Total suspended solids	5 mg/L	18	39	10.6 mg/L	2.78	205
25	Oil and grease *	1 mg/L	13	38	1.16 mg/L	0.308	22.8
4a	Ammonia plus Ammonium	0.25 mg/L	7	10	0.498 mg/L	0.255	18.9
98	Ftflow			40	275 m3/day		
	Number of Days of Effluent Discharge			74			

* Parameters with QA/QC concerns. Explanation in MISA Industrial Minerals Sector Data Quality Evaluation Report (Appendix 2).

32 – Permanent Concrete Ltd.
QW 0100 – Quarrywater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			52	8.03		
07	Specific conductance	5 uS/cm	1	1	596 uS/cm		
08	Total suspended solids	5 mg/L	28	52	7.95 mg/L	12.4	4310
98	Ftflow			46	1960 m3/day		
	Number of Days of Effluent Discharge			347			

33 – Dufferin Quarry
QW 0100 – Quarrywater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			51	7.45		
07	Specific conductance	5 uS/cm	1	1	1570 uS/cm		
08	Total suspended solids	5 mg/L	17	49	5.69 mg/L	46.5	15400
25	Oil and grease	1 mg/L	27	52	2.05 mg/L	13	4310
98	Ftflow			52	7570 m3/day		
	Number of Days of Effluent Discharge			331			

34 – Elginburg Quarry

QW 0100 – Quarrywater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			7	8.26		
07	Specific conductance	5 uS/cm	1	1	1240 uS/cm		
98	Ftflow			7	1080 m3/day		
	Number of Days of Effluent Discharge			10			

35 – Fallowfield Quarry

QW 0100 – Quarrywater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			10	8.09		
07	Specific conductance	5 uS/cm	1	1	1250 uS/cm		
08	Total suspended solids	5 mg/L	5	10	14.1 mg/L	20.4	735
98	Ftflow			9	663 m3/day		
	Number of Days of Effluent Discharge			36			

36 – Flamboro Quarries Ltd.

QW 0100 – Quarrywater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			51	7.45		
07	Specific conductance	5 uS/cm	1	1	1500 uS/cm		
08	Total suspended solids	5 mg/L	32	51	11.3 mg/L	13.4	3330
25	Oil and grease	1 mg/L	27	51	2.44 mg/L	2.6	647
98	Ftflow			52	1920 m3/day		
	Number of Days of Effluent Discharge			249			

37 – N & S Francon Quarries

QW 0100 – Quarrywater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			47	8.14		
07	Specific conductance	5 uS/cm	1	1	960 uS/cm		
08	Total suspended solids	5 mg/L	26	47	8.72 mg/L	17.7	5190
4a	Ammonia plus Ammonium	0.25 mg/L	4	12	2.29 mg/L	0.537	157
98	Ftflow			47	2020 m3/day		
	Number of Days of Effluent Discharge			293			

38 – R.E. Law Quarry

QW 0100 – Quarrywater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			50	7.91		
07	Specific conductance	5 uS/cm	1	1	2570 uS/cm		
08	Total suspended solids	5 mg/L	15	50	4.24 mg/L	59.9	13200
14	Phenolics (4AAP)	2 ug/L	4	12	5.39 ug/L	0.0757	16.7
25	Oil and grease	1 mg/L	26	50	1.41 mg/L	19.9	4370
4a	Ammonia plus Ammonium	0.25 mg/L	5	12	0.22 mg/L	3.09	680
98	Ftflow			50	14100 m3/day		
	Number of Days of Effluent Discharge			220			

39 – Bertrand and Frere

QW 0100 – Quarrywater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			22	8.09		
07	Specific conductance	5 uS/cm	1	1	713 uS/cm		
08	Total suspended solids	5 mg/L	17	22	46.1 mg/L	11.7	971
98	Ftflow			15	1150 m3/day		
	Number of Days of Effluent Discharge			83			

40 – MacCleod Quarry

QW 0100 – Quarrywater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			23	8.03		
07	Specific conductance	5 uS/cm	1	1	1350 uS/cm		
98	Ftflow			22	604 m3/day		
	Number of Days of Effluent Discharge			89			

41 – Milton Limestone

QW 0100 – Quarrywater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			52	7.74		
07	Specific conductance	5 uS/cm	1	1	699 uS/cm		
08	Total suspended solids	5 mg/L	27	52	6.29 mg/L	9.06	1200
25	Oil and grease	1 mg/L	26	52	2.19 mg/L	2.44	324
98	Ftflow			52	1490 m3/day		
	Number of Days of Effluent Discharge			133			

42 – Nelson Quarry

QW 0100 – Quarrywater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			49	7.69		
07	Specific conductance	5 uS/cm	1	1	1280 uS/cm		
08	Total suspended solids	5 mg/L	15	49	113 mg/L	407	145000
25	Oil and grease	1 mg/L	25	47	1.42 mg/L	6.53	2320
4a	Ammonia plus Ammonium	0.25 mg/L	9	12	0.645 mg/L	2.83	1010
98	Ftflow			49	4390 m3/day		
	Number of Days of Effluent Discharge			356			

42 – Nelson Quarry
WW 0200 – Washwater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			52	7.86		
07	Specific conductance	5 uS/cm	1	1	1010 uS/cm		
08	Total suspended solids	5 mg/L	31	52	14.4 mg/L	41.5	15200
25	Oil and grease	1 mg/L	29	50	1.27 mg/L	3.86	1410
98	Ftflow			52	2900 m3/day		
	Number of Days of Effluent Discharge			365			

43 – Richier Quarry
QW 0100 – Quarrywater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			22	8.07		
07	Specific conductance	5 uS/cm	1	1	825 uS/cm		
08	Total suspended solids	5 mg/L	7	22	4.58 mg/L	0.476	20.5
98	Ftflow			22	119 m3/day		
	Number of Days of Effluent Discharge			43			

44 – Ridgemount Quarries Ltd.
QW 0100 – Quarrywater Effluent
Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR
12 Month Monitoring Data
August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			32	7.91		
07	Specific conductance	5 uS/cm	1	1	944 uS/cm		
08	Total suspended solids	5 mg/L	10	32	5.66 mg/L	25.2	4990
25	Oil and grease	1 mg/L	19	32	1.31 mg/L	5.75	1140
98	Ftflow			32	4380 m3/day		
	Number of Days of Effluent Discharge			198			

45 – Uhthoff Quarry

QW 0100 – Quarrywater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			50	8.07		
07	Specific conductance	5 uS/cm	1	1	1200 uS/cm		
08	Total suspended solids	5 mg/L	11	50	7.78 mg/L	77.3	25400
25	Oil and grease	1 mg/L	29	50	1.38 mg/L	12.1	3970
98	Ftflow			51	8790 m3/day		
	Number of Days of Effluent Discharge			328			

46 – Allan G. Cook Ltd.

QW 0100 – Quarrywater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			42	7.77		
07	Specific conductance	5 uS/cm	1	1	554 uS/cm		
08	Total suspended solids	5 mg/L	9	42	4.95 mg/L	1.46	405
25	Oil and grease	1 mg/L	21	40	4.48 mg/L	1.44	400
98	Ftflow			41	284 m3/day		
	Number of Days of Effluent Discharge			277			

47 – Kam Aggregates Ltd.

WW 0100 – Washwater Effluent

Selected Parameters

MISA INDUSTRIAL MINERALS SECTOR

12 Month Monitoring Data

August 1, 1990 to July 31, 1991

ATG	Parameter	RMDL	Samples >RMDL	Samples	Average (LTA) Concentration	Average (LTA) Loading (kg/day)	Annual Loading (kg/year)
03	Hydrogen ion (pH)			21	7.93		
08	Total suspended solids	5 mg/L	21	21	27.4 mg/L	83.2	10400
14	Phenolics (4AAP)	2 ug/L	6	6	7 ug/L	0.0199	2.48
25	Oil and grease	1 mg/L	21	21	2.96 mg/L	8.45	1060
98	Ftflow			21	2770 m3/day		
	Number of Days of Effluent Discharge			125			

Appendix 2

MISA Industrial Minerals Sector

Data Quality Evaluation Report

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1. INTRODUCTION

As part of the Ontario Ministry of the Environment's Municipal Industrial Strategy for Abatement (MISA) 47 companies categorized as the Industrial Minerals Sector conducted one year of effluent monitoring (1,2). The analytical data set obtained from the 12-month monitoring period is being used by the Ministry of the Environment to select a list of parameters for effluent limit setting. Limits are being set for those parameters which are found in a company's effluent, have acceptable quality assurance and quality control (QA/QC), and are determined to be treatable by Best Available Technology Economically Achievable (BATEA).

1.1 Data Quality

The data obtained from the monitoring period must be of known reliable quality to be used in the limit setting process. To document the quality of the monitoring data, companies were required to submit quality assurance and quality control (QA/QC) data. The reporting of QC data assists in evaluating the impact of field and laboratory activities on the validity of the data reported.

The primary data quality concerns include the possibility that:

- low results represent false positive findings,
- non-detected results represent false negative findings,
- results are underestimated or overestimated,
- analytes are misidentified.

In addition to QC data, each individual test result may be qualified by the analyst using a remark code to attest to the degree of confidence in the quality or absolute value of a result.

Monitoring for the Industrial Minerals Sector was completed on July 31, 1991. This report completes the quality assessment of the final monitoring database.

The quality of the data compiled is determined through an evaluation of the remark codes that may be associated with individual test results and by the QC data collected. Based on this assessment, parameters may be excluded from further consideration in limit setting.

1.2 Monitoring Requirements

The effluent monitoring requirements for Industrial Minerals Sector Companies are contained in two separate regulations(1,2). These documents provide background information on the sector and details of the rationale behind the selection of parameters for monitoring and assignment of monitoring frequencies.

Each parameter was monitored at one of the following assigned frequencies;

Routine Monitoring	. Thrice-weekly . Weekly . Monthly
Characterization Monitoring	. Quarterly . Semi-annual . Annual

In general, parameters for which limits will or may be set were monitored on a thrice-weekly, weekly or monthly basis. Other monitoring frequencies will be used to establish the presence or absence of contaminants of concern, to estimate loadings and to determine whether more intensive monitoring or corrective action may be required in the future. Storm water effluent will not be limited; however, all companies will be required to conduct a storm water control study (SWCS) to fully assess impacts and control options.

1.3 QC Data Reporting Requirements

The effluent monitoring regulations for the Industrial Minerals Sector could require the reporting of the following QC results depending on the parameter (1,2);

- travelling blanks,
- travelling spiked blanks,
- laboratory method blanks,
- duplicate/split samples.

Each of the QA/QC data types provides information about the quality of the effluent samples. A complete description of each samples type is provided in the glossary.

Travelling blanks provide information on any problems with sample contamination. Travelling blank results are expected to be less than the laboratory detection limit (LMDL) unless field operations are introducing contamination. Travelling blanks were not required for analytical test groups (ATG's) 1, 3, 8, 28 and 29.

The primary function of travelling spiked blanks is to provide information on loss or degradation of analyte from the time of sampling to analysis. Travelling spikes are required only for analytical test groups 16 to 20, 23 and 27. A comparison against the laboratory spiked method blank may help to determine whether the sample has deteriorated or whether it is a laboratory recovery or control problem.

Laboratory method blanks are used to correct for labware/reagent contamination. The reporting of both uncorrected and corrected monitoring results indicates if a laboratory is correcting for laboratory blanks and also aids in assessing the magnitude of the effect of laboratory operations on the effluent data. Failure to properly correct monitoring results for laboratory blanks may lead to:

- false positives or overestimates (lack of correction);
- false negatives or underestimates (over-correction).

Duplicate and split samples provide an indication of the precision or reproducibility of results.

Data for other laboratory QA/QC checks such as spiked blanks and replicates used for assessing recovery and precision and which are required under the MISA general effluent monitoring regulation are not reported but retained on file by the laboratories for possible audit/review by the Ministry (2).

2. Assessment of Data Quality

The evaluation of monitoring data quality follows the approach outlined in the draft MISA Issues Resolution Process - Issue Resolution Committee Reports (Ontario Ministry of the Environment, 1990).

2.1 Retrieval and Screening of Data

The monitoring database is screened on two levels prior to evaluation of the QC data.

- Screening by remark code.
- Screening by frequency of detection (90/10 edit rule).

The intent is to focus the the quality assessment by considering only data which will be used in the limit setting process or for estimating contaminant loadings.

Remark Codes:

Table A lists the remark codes which were used in the Industrial Minerals Sector database to qualify individual results reported. All data with the remark code UCR were excluded from further evaluation because the results are questionable. As outlined in table A, data with analytical results below the RMDL were used as reported unless the result was less than RMDL/10. In this case, the value of RMDL/10 was substituted as per the criteria defined in the draft MISA Issues Resolution Process -- Issue Resolution Committee Reports (4).

TABLE A

Processing of Data by Remark Code

The remark codes listed below were used in the MISA Industrial Minerals Sector 12-month database to qualify the data reported. Data associated with these remark codes were managed as follows.

---

1. For the following four remark codes;

<	Actual amount less than reported
<DL	Reported value = MDL: measured amt. MDL (non-zero)
<T	A measurable trace amount: interpret with caution
<WE	No measurable response (diln/conc): reported value

. If the concentration reported was less than RMDL/10 or equal to zero then RMDL/10 was substituted.
. Other results used as reported.

---

2. For the following twelve remark codes;

?	Late data: data not yet available: see text
|IN	No data: insufficient volume due to inspection
|NM	No effluent - no sample available
A	Approximate value
AIS	Approximate value: insufficient sample
AR	Attached report
Blank	ie. No remark code entered
IM	Interference: sample matrix
N/A	No data will be reported
OLD	Old: sample exceeds maximum storage time
SD	Sample duplicates differ in appearance
SIP	Sample improperly preserved

. All zero results were excluded.
. If the concentration reported was less-than RMDL/10 and greater-than zero then RMDL/10 was substituted.
. Other results used as reported.

---

3. Data with the following remark codes were excluded;

UCR	Data unreliable: could not confirm by reanalysis

Frequency of Detection (90/10 Edit rule)

Data for each site's effluent streams are then screened for those substances monitored and found at a frequency great enough to warrant consideration for limit setting or used for estimating loadings. Parameters are selected according to the 90/10 criteria defined in the draft Issues Resolution Process -- Issue Resolution Committee Reports as follows:

A parameter is selected for further consideration unless 90% of the analytical results are "not detected". This is accomplished statistically, at the 95% confidence level, using a binomial test if there are more than twenty samples and the table by Conover (4) for sample numbers ≤ 20. An analytical result is treated as "not-detected" if the result reported is less than the regulation method detection limit (RMDL) or equal to the RMDL with an associated remark code of <DL, <T, < or <WE. Parameters selected according to the above conditions are termed "priority 1" parameters. A parameter not selected as priority 1 is assigned a "priority 2" designation. "Priority 3" is reserved for instances were, due to low monitoring frequency (ie. ≤ 4 samples), a statistical decision cannot be made to categorize a parameter as priority 1 or 2.

Examples of the frequency of detection required for a parameter to be listed as a candidate for limits using each of these sampling frequencies are given in table B.

TABLE B

Parameter Selection Table

Sample Size	Minimum Number <RMDL for Exclusion from Priority 1
2	1
3	2
4	2
5	3
6	4
7	5
8	6
9	6
10	7
11	8
12	9
20	16
30	25
52	44
156	135

LEGEND:
Priority 1: Potential for Limit
Priority 2: Not Qualified for Priority 1
Priority 3: Indeterminate 1/2 <RMDL
2/3 <RMDL
2/4 <RMDL

An analytical result is treated as <RMDL if the result reported is less-than the regulation method detection limit (RMDL) or equal to the RMDL with an associated remark code of <DL, <W, <WE, <, or <T.

2.2 Preliminary List of Parameters

Based on the selection criteria, and prior to any evaluation of data quality, a total of 40 parameters were classified as priority 1 for the Industrial Minerals Sector. The parameters selected as priority 1 are given in Table C along with the total number of effluent streams for which each parameter was selected and also according to the type of monitoring (ie. routine, characterization or storm water monitoring). The parameter pH is not included in the QA/QC analysis since it will be regulated within the range specified in the Effluent Limits Regulation. It was not necessary for the plant sites to submit QA/QC data for specific conductance.

TABLE C

MISA Industrial Minerals Sector
Selected Parameters

Listed According to the Number of Streams in Which Each Parameter was Selected

ATG	Parameter	Routine Monitoring	Characterization Monitoring	Storm Water Monitoring
01	COD		4	
02	Cyanide Total	1	3	1
06	Total phosphorus	3	3	
08	Total suspended solids	52		10
09	Aluminum		23	5
	Cadmium	2		
	Cobalt		2	
	Copper	2		
	Molybdenum			2
	Nickel		3	
	Vanadium		2	
	Zinc	1	14	3
10	Antimony		2	
	Arsenic	3	1	
14	Phenolics (4AAP)	22	1	1
15	Sulphide		10	4
16	1,2-Dichloroethane		1	
17	Toluene		4	
19	Di-n-butyl phthalate		2	
	Phenanthrene		1	
20	2,4-Dimethylphenol	1		
	4-Nitrophenol		4	
	Pentachlorophenol		5	
	Phenol	1		
	m-Cresol	1		
	o-Cresol	1		
	p-Cresol	1		
25	Oil and grease	41		4
4a	Ammonia plus Ammonium	24	1	1
	Total Kjeldahl Nitrogen	5		
4b	Nitrate+Nitrite	4	23	8
5a	DOC		31	5
5b	TOC, Total Organic Carbon		2	
IM1	Chlorides	11	17	3
IM3	Fluoride			6
IM4	Sulphates	6	23	3
IM6	Thiocyanates, Filtered		2	
IM8	Cyanide (WAD)		1	
IM9	Cyanates, Filtered		1	
IM10	Dissolved Solids	5		

Routine Monitoring = Daily, Thrice Weekly, Weekly or Monthly Monitoring
Characterization Monitoring = Quarterly, Semi-annual or Annual Monitoring
Storm Water Monitoring = Any Parameters Selected for Storm Water Streams
Intake Streams are Not Counted

3. Data Quality Assessment

3.1 Evaluation of Data by Remark Code

Based on the selection criteria, a parameter may be preliminarily selected at a stream because of results which did not meet the RMDL. These results are identified by a value greater than the RMDL and an associated 'less-than' remark code of <DL, <T, < or <WE. It is convenient to consider these results in two ways based on the level of non-compliance with the RMDL and the reason behind it.

1. Results Coded 'Less-than' Above RMDL But Not Above 1.6 Times RMDL

   In the absence of any other positively detected samples or if subsequent results are reported at levels below RMDL, such a parameter may be removed from the list of parameters selected for a stream.

   An estimated laboratory MDL which exceeds RMDL suggests some inadequacy in the analytical sensitivity. This conclusion is defensible if MDL exceeds 1.6 times RMDL. For the purposes of the MISA program individual 'less-than' data below 1.6 times RMDL can be used to assess the absence of an analyte at levels above RMDL. This is particularly true if the laboratory MDL is subsequently improved and it is demonstrated that subsequent measurements are continually below RMDL.

   Table E (page 60) lists those streams for which parameters were selected based on "less-than" results reported above the RMDL but where results were within 1.6 times the RMDL. These streams may be removed from the list of streams selected for a parameter. Monitoring for assessment may be required.

2. Results Coded 'Less-than' Above 1.6 Times RMDL

   Such results cannot be used to assess presence or absence of analyte at levels below RMDL. The parameter cannot be automatically dropped from the selection list. Ongoing 'monitoring for assessment' may be required provided an appropriate analytical method is available.

   There are two cases. Either the laboratory MDL was inadequate for the MISA program (proper code <DL), or the sample matrix prevents analysis at these levels (proper code < or <WE). In the latter case the reported result will usually be much higher than the RMDL. In any event the value reported is not an estimate of the sample content. If the matrix effect is severe enough an alternate analytical method may be required before reliable data can be obtained.

Table F (page 60) lists those parameters and streams selected because of 'less-than' data which exceeds 1.6 times RMDL. Other process related information is required to assess the potential for this parameter to exist in the effluent and therefore the need for, or appropriateness of, 'monitoring for assessment'.

3.2 Evaluation of Data by QA/QC Results

3.2.1 Presentation of Data for Quality Assessment

Appendix B contains tables summarizing effluent monitoring and any accompanying QC data for each parameter on the initial list of selected parameters. The companies are grouped according to the following categories;

- Cement;
- Chemical Lime/Magnesium;
- Graphite/Gypsum/Nepheline Syenite/Talc;
- Salt;
- Clay and Shale;
- Quarries;
- Sand and Gravel.

A list of the companies and full stream identifications is given in Appendix C.

The salt category conducted QC sampling on all effluent streams. In categories other than salt, companies with multiple streams were required to designate one effluent at each site as the QC stream and conduct QC sampling only on that stream; therefore, monitoring and QC data for the QC stream are presented for a site's selected parameters regardless of whether the parameter is selected as "priority 1" in the QC stream.

All monitoring and travelling blank data are presented as concentration ratios. A concentration ratio is the analytical result divided by the RMDL for the parameter.

Laboratory corrections and duplicate or split samples are presented as difference ratios. Difference ratios for a laboratory corrections are defined as the difference between uncorrected and corrected monitoring data divided by the RMDL for the parameter. Difference ratios for duplicate or split samples are defined as the difference between the monitoring sample concentrations and the duplicate or split sample concentrations divided by the regulation method detection limit.

The data tables serve as a screening tool for the quality of the data. Scaling results against the RMDL provides an immediate indication of the significance of a result. For example, a concentration ratio of 1.0 would indicate that the reported result was equal to the RMDL. Concentration ratios for travelling blanks which are always less than or equal to 1.0 would indicate that field contamination was not significant. Travelling blank concentration ratios greater than 1.0 would be compared to the monitoring concentration ratios and, if significant, a more detailed investigation would be carried out.

Difference ratios of zero for laboratory corrections indicate that the laboratory is not correcting for lab blanks. When laboratory corrections are made, they should be stable and less than the monitoring concentrations.

Minimum, median, maximum and average concentration and difference ratios are presented for each stream where a parameter was selected.

Travelling spiked blank data are presented as minimum, median, maximum and average spike recoveries. Also presented is the average quantity spiked divided by the RMDL.

The data tables also classify monitoring data for the selected parameters according to their frequency and level of detection in each effluent stream.

Parameters are classified as:

FH	Frequently Found - High Level
FM	Frequently Found - Medium Level
FL	Frequently Found - Low Level
IH	Infrequent Found - High Level
IM	Infrequent Found - Medium Level
IL	Infrequent Found - Low Level
NO	Non-occurrence

Note that these classifications do not reflect environmental or effluent quality/significance. They are used simply to distinguish tentative data quality issues. The relative uncertainty of measurements near or at the RMDL, and the potential for biased estimates, contamination, under-recovery or misidentification suggests that individually such measurements are 'qualitative ' in nature. On the other hand results above 5 times RMDL are more reliable in terms of precision, and are less prone to bias, etc. and individually can be considered more quantitative and reliable. A full description of the frequency classification is given in Appendix D.

The frequency of occurrence classification helps dictate the strategy and the predominant general QC concerns which must be evaluated. Flow charts for the evaluation of QC data are also given at the back of Appendix D. These flow charts provide guidance for systematic evaluation of specific QC data.

3.2.2 Evaluation of Frequently Found Parameters

Effluent data were considered as being either an acceptable representation of actual levels, a possible under-estimate or a possible over-estimate of the actual level of a particular analyte. The likelihood of over-estimation is based on over-recovery of travelling spiked blanks and travelling blanks greater than the RMDL. The likelihood of under-estimation is based on under-recovery of travelling spiked blanks and high laboratory blanks. False positives become a concern for low level data (ie. FL).

3.2.3 Evaluation of Infrequently Found Parameters

Effluent data were considered as being either acceptable (true positive) or questionable (possible false positive). The likelihood of false positives is based on over-recovery of travelling spiked blank samples and/or contamination of travelling blank samples.

3.2.4 Evaluation of Non-Selected Parameters

Parameters not selected as priority 1 are investigated for possible false negative results. The possibility of false negatives is based on gross under-recovery of travelling spiked blank samples (< 20%) and over correction for laboratory blanks. Parameters showing under-recovery are listed in Appendix E.

During the evaluation of the QC data, consideration was also given to the following:

- Unique parameters (ie. parameters selected for only one site) were investigated for linkage to chemicals used at the site.
- Parameters which are selected for a limited number of sites were investigated for linkages to use of the same laboratory and for use of chemicals on-site.

QC data for each of the selected parameters are discussed in Appendix A.

4.0 Conclusions:

The QC data collected indicate a possible quality concern for those parameters listed in table D. The specific quality concern for each parameter's data is also listed and discussed in detail in appendix A.

TABLE D

Parameters with Data Quality Concerns Based on Evaluation of QA/QC Data

Parameter	Company	QA/QC Concern
Oil & Grease	21 - Sifto Canada Inc., PW 0100	Data may be overestimated
Zinc	21 - Sifto Canada Inc., PW 0100	Data may be overestimated
m - Cresol	10 - Reiss Lime Company Ltd., LP 0100	Data may be overestimated
Phenol	10 - Reiss Lime Company Ltd., LP 0100	Data may be underestimated
COD	21 - Sifto Canada Inc., PW 0100	Data are unreliable
COD	21 - Sifto Canada Inc., PW 0100	Data are unreliable
COD	21 - Sifto Canada Inc., PW 0100	Data are unreliable
COD	21 - Sifto Canada Inc., PW 0100	Data are unreliable

Based on remark codes associated with the monitoring data, tables E and F list those parameters and streams which should be considered for removal from the list of parameters selected. Parameters for these streams may require further monitoring. The data for each of these parameters are reviewed in detail in appendix A.

TABLE E

Parameters Selected Based on Data Reported >RMDL but <1.6RMDL with a "Less-than" Remark Code

Parameter	Company
Antimony	19 - Canada Talc Ltd., MW 0100
1,2 - Dichloroethane	10 - Reiss Lime Company Ltd., LP 0100
Toluene	19 - Canada Talc Ltd., MW 0100
	20 - Luzenac Inc., MW 0100
	20 - Luzenac Inc., QW 0200
Pentachlorophenol	13 - Timminco Ltd., MP 0100
	19 - Canada Talc Ltd., MW 0100
	20 - Luzenac Inc., MW 0100
	20 - Luzenac Inc., PW 0200
Oil & Grease	31 - Carden Quarry, QW 0100

Note: "Less-than" Remark Codes are <, <DL, <WE, <T

TABLE F

Parameters Selected Based on Data Reported Above 1.6RMDL with a "Less-than" Remark Code

Parameter	Company
Antimony	22 - The Canadian Salt Company, MW 0300
Arsenic	22 - The Canadian Salt Company, MW 0300
4 - Nitrophenol	13 - Timminco Ltd., MP 0100
	19 - Canada Talc Ltd., MW 0100
	20 - Luzenac Inc., MW 0100
	20 - Luzenac Inc., PW 0200
Cyanates, Filtered	21 - Sifto Canada Inc., MW 0200
Thiocyantes, Filtered	21 - Sifto Canada Inc., PW 0100
	21 - Sifto Canada Inc., MW 0200

Note: "Less-than" Remark Codes are <, <DL, <WE, <T

Table G provides the final list of parameters and the number of streams according to the type of monitoring with acceptable data. In Appendix C the final list of parameters with acceptable data is further broken down into a list for each effluent stream.

TABLE G

MISA Industrial Minerals Sector
Parameters with Acceptable Data

Listed According to Number of Streams in Which Each Parameter was Selected

ATG	Parameter	Routine Monitoring	Characterization Monitoring	Storm Water Monitoring
02	Cyanide Total	1	3	1
06	Total phosphorus	3	3	
08	Total suspended solids	52		10
09	Aluminum		23	5
	Cadmium	2		
	Cobalt		2	
	Copper	2		
	Molybdenum			2
	Nickel		3	
	Vanadium		2	
	Zinc	1	14	3
10	Arsenic	3		
14	Phenolics (4AAP)	22	1	1
15	Sulphide		10	4
17	Toluene		1	
19	Di−n−butyl phthalate		2	
	Phenanthrene		1	
20	2,4−Dimethylphenol	1		
	Pentachlorophenol		1	
	Phenol	1		
	m−Cresol	1		
	o−Cresol	1		
	p−Cresol	1		
25	Oil and grease	40		4
4a	Ammonia plus Ammonium	24	1	1
	Total Kjeldahl Nitrogen	5		
4b	Nitrate+Nitrite	4	23	8
5a	DOC		31	5
5b	TOC, Total Organic Carbon		2	
IM1	Chlorides	11	17	3
IM3	Fluoride			6
IM4	Sulphates	6	23	3
IM8	Cyanide (WAD)		1	
IM10	Dissolved Solids	5		

Routine Monitoring = Daily, Thrice Weekly, Weekly or Monthly Monitoring
Characterization Monitoring = Quarterly, Semi−annual or Annual Monitoring
Storm Water Monitoring = Any Parameters Selected for Storm Water Streams
Intake Streams are Not Counted

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APPENDIX A

Results of QA/QC Evaluation for Selected Parameters

Results of QA/QC Assessment for Selected Parameters

Total Suspended Solids (TSS) **RMDL = 5 mg/L**

Cement Category
(Selected in 14 of 14 streams)
Monitoring of TSS was required thrice-weekly for cement plant and quarry water streams and monthly for storm water.

3 - Lafarge, Woodstock, CP 0100
143 monitoring samples were reported with a detection frequency of 93%, an average concentration ratio of 46.4 RMDL, a maximum of 908 RMDL. 12 duplicate samples were reported (average difference ratio = 5.2 RMDL). A maximum duplicate difference ratio of 39 RMDL is due to poor agreement between samples given below.

Date	Monitoring	Duplicate
91/07/10	326 mg/L	131 mg/L

The other 11 duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

5 - St. Marys, Bowmanville, CP 0100
145 monitoring samples reported with a detection frequency of 99%, an average concentration ratio of 23 RMDL, a maximum of 1027 RMDL. 11 duplicate samples were reported (average difference ratio = 1.22 RMDL). The maximum duplicate difference ratio (8.4 RMDL) is due to poor agreement between samples given below.

Date	Monitoring	Duplicate
91/04/15	32 mg/L	74 mg/L

The other 10 duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

Other Cement Category Streams:
Duplicate difference ratios for other streams are not significant compared to the level of monitoring samples; therefore, data are acceptable.

Chemical Lime/Magnesium Category
(Selected in 8 of 9 streams)
Monitoring for TSS was required thrice-weekly for lime plant and magnesium plant streams and monthly for storm water.

10 - Reiss Lime Company Ltd., LP 0100
127 monitoring samples were reported with a detection frequency of 89%, an average concentration ratio of 3.8 RMDL and a maximum concentration ratio of 28 RMDL. 12 duplicate samples were reported (average difference ratio = 0.97 RMDL). The maximum duplicate difference ratio (4.8 RMDL) is due to poor agreement between samples given below.

Date	Monitoring	Duplicate
91/06/18	32 mg/L	56 mg/L

The other 11 duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

Other Chemical Lime/Magnesium Category Streams:
Duplicate difference ratios for other streams are not significant compared to monitoring concentration ratios; therefore, data are acceptable.

Graphite/Gypsum/Nepheline Syenite/Talc Category:
(Selected in 11 of 12 streams)
Monthly monitoring was required for all graphite/gypsum/nepheline syenite/basalt/talc category storm water streams, weekly monitoring was required for 3M Canada's quarry water effluent while thrice weekly monitoring was required for all other streams.

16 - CGC Inc., GYP 0200
157 monitoring samples were reported with a detection frequency of 97%, an average concentration ratio of 7.9 RMDL and a maximum of 400 RMDL. 12 duplicate samples were reported (average difference ratio = 1.4 RMDL). The maximum duplicate difference ratio (8 RMDL) is due to poor agreement between samples given below.

Date	Monitoring	Duplicate
90/10/30	12 mg/L	30 mg/L

The other 11 duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

Other Graphite/Gypsum/Nepheline Syenite/Talc Category Streams
Duplicate difference ratios are not significant compared to monitoring concentration ratios; therefore, data are acceptable.

Salt Category
(Selected in 6 of 6 streams)
Average concentration ratios ranged from 2.7 to 70 RMDL over the selected streams.
QC sampling was not required for TSS in the salt category; however, 22 - The Canadian Salt Company did report results of split samples which are discussed below.

22 - The Canadian Salt Company DC 0500
76 monitoring samples were reported with a detection frequency of 100%, an average concentration ratio of 45.7 RMDL and a maximum of 717 RMDL. 75 split samples were reported (average difference ratio = 2.2 RMDL). All show acceptable agreement. The maximum difference ratio (31.8 RMDL) is due to high concentrations for the samples given below.

Date	Monitoring	Split
90/02/13	3299 mg/L	3458 mg/L

Conclusion: Data are acceptable.

Clay and Shale Category
(Selected in 6 of 6 streams)
Monthly monitoring of TSS was required for clay and shale category streams.

26 - Canada Brick, Gloucester, SW 0100
5 monitoring samples were reported with a detection frequency of 100%, an average concentration ratio of 20.6 RMDL, a maximum concentration ratio of 46 RMDL. 4 duplicate samples were reported (average difference ratio = 2.7 RMDL). 1 duplicate sample shows poor agreement (difference ratio = 4.8 RMDL)

Date	Monitoring	Duplicate
90/11/13	58 mg/L	34 mg/L

The maximum difference ratio (6 RMDL) is due to high level samples given below.

Date	Monitoring	Duplicate
90/09/24	230 mg/L	200 mg/L

The remaining 2 duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

24 - Canada Brick, Burlington, SW 0100
10 monitoring samples were reported with a detection frequency of 100%, an average concentration ratio of 56.7 RMDL and a maximum of 300 RMDL. 4 duplicate samples were reported (average difference ratio = 2.2 RMDL). All 4 duplicate samples show acceptable agreement. The maximum difference ratio (8 RMDL) is due to high level samples given below.

Date	Monitoring	Duplicate
90/11/06	960 mg/L	1000 mg/L

Conclusion: Data are acceptable.

Other Clay and Shale Category Streams:
Duplicate difference ratios are not significant compared to the level of monitoring samples; therefore, data are acceptable.

Quarries Category
(Selected in 16 of 20 streams)
All quarries category streams conducted weekly monitoring for TSS.

31 - Carden Quarry, QW 0100
39 monitoring samples were reported with a detection frequency of 46%, an average concentration ratio of 2.1 RMDL and a maximum of 17.8 RMDL. 10 duplicate samples were reported (average difference ratio = 1.5 RMDL). The maximum difference ratio (9.4 RMDL) is due to poor agreement. One other duplicate sample also shows poor agreement. These samples are given below.

Date	Monitoring	Duplicate
90/08/28	83 mg/L	36 mg/L
90/10/11	22 mg/L	5 mg/L

The other 10 duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

42 - Nelson Quarry, QW 0100
49 monitoring samples were reported with a detection frequency of 31%, an average concentration ratio of 22.6 RMDL and a maximum of 830 RMDL. 12 duplicate samples were reported (average difference ratio = 4.9 RMDL). The maximum difference ratio (52 RMDL) is due to poor agreement for the samples given below.

Date	Monitoring	Duplicate
91/06/11	664 mg/L	402 mg/L

The other 11 duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

Other Quarries Category Streams:
Duplicate/split difference ratios for other streams are not significant compared to monitoring sample concentration ratios; therefore, data are acceptable.

Sand and Gravel Category:
(Selected in 1 of 1 stream)
Weekly monitoring of TSS was required for the sand and gravel category. QC data were not reported.

Oil and Grease **RMDL = 1 mg/L**

Cement Category:
(Selected in 12 of 14 streams)
Thrice-weekly monitoring was conducted on cement plant and quarry water streams and monthly monitoring on storm water.

4 - Essroc Canada Inc. CP 0300
149 monitoring samples were reported with a detection frequency of 30% an average concentration ratio of 1.45 RMDL and a maximum of 15 RMDL. 11 duplicate samples were reported (average difference ratio = 1.4 RMDL). The maximum difference ratio (12 RMDL) is due to poor agreement between the samples given below.

Date	Monitoring	Duplicate
90/11/19	15 mg/L	3.0 mg/L

The other 10 duplicate samples reported show acceptable agreement.
Conclusion: Data are acceptable.

3 - Lafarge, Woodstock, CP 0100
143 monitoring samples were reported with a detection frequency of 79% an average concentration ratio of 4.3 RMDL and a maximum of 46 RMDL. 12 duplicate samples were reported (average difference ratio = 1.2 RMDL). The maximum duplicate difference ratio (6 RMDL) is due to marginal agreement between samples given below.

Date	Monitoring	Duplicate
90/03/21	7.0 mg/L	3.0 mg/L

Other duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

Other Cement Category Streams:
Duplicate difference ratios are not significant compared to the level of monitoring concentration ratios; therefore, data are acceptable.

Chemical Lime/Magnesium Category:
(Selected in 7 of 9 streams)
Monitoring for oil and grease was conducted thrice-weekly on lime plant and magnesium plant streams and monthly on storm water. Duplicate difference ratios are not significant compared to the level of monitoring concentration ratios.
Conclusion: Data are acceptable.

Graphite/Gypsum/Nepheline Syenite/Talc Category:
(Selected in 7 stream of 12 streams)
Monitoring for oil and grease was conducted monthly on all storm water streams, weekly on 3M Canada's quarry water effluent and thrice-weekly on all other graphite/gypsum/nepheline syenite/basalt/talc category streams.

15 - Westroc Industries Ltd., MW 0100
156 monitoring samples were reported with a detection frequency of 97%, an average concentration ratio of 12.8 RMDL and a maximum of 113 RMDL. 12 duplicate samples were reported (average difference ratio = 5 RMDL). The maximum duplicate difference ratio (17 RMDL) is due to poor agreement between samples given below.

Date	Monitoring	Duplicate
91/05/13	20 mg/L	3 mg/L

The other 11 duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

Other Graphite/Gypsum/Nepheline Syenite/Talc Category Streams:
Duplicate difference ratios are not significant compared to the level of monitoring concentration ratios. Data are acceptable.

Salt Category:
(Selected in 4 of 6 streams)
Oil and Grease was monitored thrice-weekly in mine water and process effluents and monthly in storm water.

22 - Sifto Canada Inc. PW 0100
152 monitoring samples were reported with a detection frequency of 36%, an average concentration ratio of 1.27 RMDL and a maximum of 7.6 RMDL. 4 travelling blanks were reported with a 50% detection frequency, an average concentration ratio of 2.25 RMDL and a maximum of 4 RMDL. Monitoring samples and travelling blanks reported on the same day are given below.

Date	Monitoring	Travelling Blank
90/04/16	1.0 mg/L	3.0 mg/L
90/08/22	2.0 mg/L	1.0 mg/L
90/11/21	1.0 mg/L	1.0 mg/L
91/01/16	3.0 mg/L	4.0 mg/L

Conclusion: Results may be overestimated or false positives.

22 - The Canadian Salt Company, DC 0500
76 monitoring samples were reported with a detection frequency of 78% an average concentration ratio of 4.0 RMDL and a maximum of 38.4 RMDL. 75 duplicate samples were reported. All duplicate samples show acceptable agreement. The maximum duplicate difference ratio (6.8 RMDL) is due to high level samples given below.

Date	Monitoring	Duplicate
90/02/13	38.4 mg/L	31.6 mg/L

Conclusion: Data are acceptable.

Other Salt Category Streams:
Travelling blank results from other salt category streams are not significant compared to the level of monitoring samples. Data are acceptable.

Quarries Category
(Selected in 11 of 20 streams)
Oil and grease was monitored weekly on quarry and wash water streams and monthly on storm water.

29 - Amherst Quarries Ltd., QW 0100
49 monitoring samples were reported with a detection frequency of 55% an average concentration ratio of 2.9 RMDL and a maximum of 22.4 RMDL. 11 duplicate samples were reported (average difference ratio = 1.7 RMDL). The maximum difference ratio (6.1 RMDL) is due to poor agreement between samples given below.

Date	Monitoring	Duplicate
91/05/13	0.23 mg/L	6.3 mg/L

The other 10 duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

31 - Carden Quarry, QW 0100
38 monitoring samples were reported with a detection frequency of 46%, an average concentration ratio of 1.2 RMDL and a maximum of 3.0 RMDL. 7 results were reported at 1.4 RMDL with <DL remark codes. If these results are treated as "not detected" then there are only 6 positively detected samples (6 of which equal the RMDL) and oil and grease would not be selected in this stream. 10 duplicate samples were reported (average difference ratio = 0.2 RMDL, maximum difference ratio = 2.0 RMDL) all show aceptable agreement.

Conclusion: Data are acceptable. Selection depends on treatment of data at 1.4 RMDL with <DL codes. The problem with oil and grease data is reliability of sampling as well as the analytical method used. Low measurements may reflect under-recovery. Familiarity with the site is required to decide whether cases like Carden Quarry should be selected or not.

33 - Dufferin Quarry, QW 0100
52 monitoring samples were reported with a detection frequency of 52% an average concentration ratio of 2.1 RMDL and a maximum of 12 RMDL. 12 duplicate samples were reported (average difference ratio = 1.45 RMDL). The maximum duplicate difference ratio (8.8 RMDL) is due to marginal agreement for the samples given below.

Date	Monitoring	Duplicate
90/09/12	12 mg/L	3.2 mg/L

The other 11 duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

36 - Flamboro Quarries Ltd., QW 0100
51 monitoring samples were reported with a detection frequency of 53% an average concentration ratio of 2.4 RMDL and a maximum of 39.7 RMDL.
12 duplicate samples were reported (average difference ratio = 3.6 RMDL). The maximum duplicate difference ratio (37 RMDL) is due to poor agreement for the samples given below.

Date	Monitoring	Duplicate
90/08/23	39.7 mg/L	2.5 mg/L

The other 11 duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

38 - R.E. Law Quarry, QW 0100
50 monitoring samples were reported with a detection frequency of 52% an average concentration ratio of 1.4 RMDL, a maximum of 9 RMDL. 12 duplicate samples were reported (average difference ratio = 0.9 RMDL). The maximum duplicate difference ratio (8 RMDL) is due to poor agreement for the samples given below.

Date	Monitoring	Duplicate
90/11/14	9.0 mg/L	1.0 mg/L

All other duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

45 - Uhthoff Quarry, QW 0100
50 monitoring samples were reported with a detection frequency of 58% an average concentration ratio of 1.4 RMDL and a maximum of 4.0 RMDL. 12 duplicate samples were reported (average difference ratio = 0.6 RMDL). The maximum duplicate difference ratio (5 RMDL) is due to marginal agreement between the samples given below.

Date	Monitoring	Duplicate
90/11/14	1.0 mg/L	6.0 mg/L

The other 11 duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

Other Quarries Category Streams:
Duplicate difference ratios are not significant compared to the level of monitoring concentration ratios. Data are acceptable.

Sand and Gravel Category:
(Selected in 1 of 1 streams)
Oil and grease was monitored weekly for the sand and gravel wash water stream.
QC data were not reported.

DOC **RMDL = 0.5 mg/L**

Salt Category
(Selected in 5 of 6 streams)
DOC was monitored on a quarterly basis in salt category streams. Average concentration ratios range from 5.8 to 360 RMDL over the selected streams. Travelling blanks are not significant compared to the monitoring samples.
Conclusion: Data are acceptable.

Other Categories
DOC was monitored on a semi-annual basis in other categories. QC sampling was not required; however, split samples were provided by 4 companies. Agreement is acceptable for all.

Nitrate and Nitrite **RMDL = 0.25 mg/L**

Salt Category
(Selected in 5 of 6 streams)
Monthly monitoring was required for salt category streams. Average concentration ratios range from 4.4 to 180 RMDL. Concentration ratios for travelling blanks from the salt category are all <RMDL.
Conclusion: Data are acceptable.

Other Categories:
Nitrate and nitrite was not monitored at the magnesium plant or sand and gravel site. All storm water streams were monitored on a monthly basis except the clay and shale category which monitored semi-annually. All other sector streams were monitored on a semi-annual basis. Quality control samples were not required; however, 4 companies did report results of split samples. Agreement is acceptable for all.

Sulphates **RMDL = 5.0 mg/L**

Cement Category
(Selected in 14 of 14 streams)
Monthly monitoring of sulphates was required for cement plant and storm water streams and semi-annual monitoring for quarry water streams. Average concentration ratios over all cement category streams range from 4.0 to 182 RMDL. Duplicate difference ratios (maximum 6 RMDL) are not significant compared to the level of monitoring results.
Conclusion: Data are acceptable.

Salt Category
(Selected in 5 of 6 streams)
Quarterly monitoring was required for salt category streams.
Average concentration ratios range from 11.8 to 820 RMDL over the selected streams. Travelling blank concentration ratios are not significant compared to the monitoring sample concentration ratios.
Conclusion: Data are acceptable.

Other Categories:
Other categories were monitored for sulphates on a semi-annual basis. QC sampling was not required.

Chlorides **RMDL = 2.0 mg/L**

Cement Category
(Selected in 14 of 14 streams)
Monitoring for chlorides was conducted monthly for cement plant process and storm water streams and semi-annually for quarry water streams. Average concentration ratios for the selected streams range from 6.4 to 1975 RMDL.

6 - St. Marys, St. Marys, CP 0100
12 monitoring samples were reported with a detection frequency of 100% and average concentration ratio of 38.4 RMDL and a maximum of 105 RMDL. 4 duplicate samples were reported, all show acceptable agreement. The maximum duplicate difference ratio (10.5 RMDL) is due to high level of monitoring samples given below.

Date	Monitoring	Duplicate
91/05/08	110	89

Conclusion: Data are acceptable.

Other Cement category Streams:
Duplicate difference ratios are not significant compared to monitoring samples.
Conclusion: Data are acceptable.

Salt Category
(Selected in 6 of 6 streams)
Chlorides were monitored thrice-weekly in salt category streams. Average concentration ratios range from 6 to 50235 RMDL over the selected streams. Some travelling blank contamination occurred at Sifto Canada Inc. MW 0200 (average = 14.9 RMDL) but at levels not significant compared to the monitoring samples (average = 17951 RMDL).
Conclusion: Data are acceptable.

Other Categories:
Other categories monitored for chlorides on a semi-annual basis. Reporting of QC results was not required.

Aluminum **RMDL = 30 ug/L**

Salt Category
(Selected in 3 of 6 streams)
Aluminum was monitored quarterly in salt category streams. Average concentration ratios range from 3.2 to 24.4 RMDL over the selected streams. Aluminum was not detected in travelling blanks.
Conclusion: Data are acceptable.

Other Categories:
Aluminum was monitored semi-annually in other streams. QC sampling was not required.

Ammonia plus Ammonium **RMDL = 0.25 mg/L**

Salt Category
(Selected in 4 of 6 streams)
Monthly monitoring of ammonia plus ammonium was required for salt category streams. Average monitoring concentration ratios range from 0.86 at 25.6 RMDL over the selected streams. Ammonia plus ammonium was not detected in travelling blanks.
Conclusion: Data are acceptable.

Quarries Category
(Selected in 4 of 19 streams)
Monthly monitoring of ammonia plus ammonium was required for quarry and storm water and semi-annual monitoring for wash water streams.

38 - R.E. Law Quarry, QW 0100
12 monitoring samples were reported with a detection frequency of 42% an average concentration ratio of 0.88 RMDL a maximum of 1.8 RMDL. 5 duplicate samples were reported (average difference ratio = 165 RMDL). The maximum duplicate difference ratio (823 RMDL) is due to poor agreement between samples given below.

Date	Monitoring	Duplicate
90/10/18	0.20 mg/L	206 mg/L

The other 4 duplicate samples show acceptable agreement.
Conclusion: Data are acceptable.

37 - N & S Francon Quarries, QW 0100
12 monitoring samples were reported with a detection frequency of 33% an average concentration ratio of 9.2 RMDL and a maximum of 100 RMDL. 1 duplicate sample was reported (difference ratio = 4 RMDL)
Conclusion: Insufficient information to assess precision.

Other Categories:
Duplicate difference ratios for other streams are small compared to monitoring concentration ratios.
Conclusion: Data are acceptable.

Phenolics (4AAP) **RMDL = 2.0 ug/L**

Salt Category:
(Selected in 4 of 6 streams)
Average concentration ratios range from 2.9 to 11.4 RMDL over the selected streams. Phenolics were detected in only 1 travelling blank (3.5 RMDL at 22 - Sifto Canada Inc., MW 0100).
Conclusion: Data are acceptable.

Quarries Category:
(Selected in 1 of 19 streams)
Phenolics were monitored monthly in all quarry category streams.

38 - R.E. Law Quarry, QW 0100
12 samples were reported. The maximum result at 25 RMDL is qualified by an SIP remark code. If phenolics samples are not properly preserved the phenol will probably degrade (not increase). 25 times RMDL should be accepted as a positive result.
Conclusion: Retain 38 - R.E. Law Quarry on the list of streams selected for phenolics.

Other Categories:
Phenolics were monitored monthly in other categories. Average concentration ratios range from 0.83 to 169.5 RMDL. Duplicate difference ratios for all streams are not significant compared to the levels in monitoring samples.
Conclusion: Data are acceptable.

Sulphide **RMDL = 0.02 mg/L**

Selected in 14 streams based on semi-annual monitoring. Reporting of QC data was not required.

Zinc **RMDL = 10.0 ug/L**

Salt Category:
(Selected in 4 of 6 streams)

22 - Sifto Canada Inc., PW 0100
4 monitoring samples were reported with a detection frequency of 75% an average concentration ratio of 3.25 RMDL and a maximum of 7 RMDL. Zinc was detected (5 RMDL) in 1 of 4 travelling blanks on the same day as the maximum monitoring sample.
Conclusion: Data may be overestimated. Data are acceptable for the presence of zinc.

Graphite/Gypsum/Nepheline Syenite/Talc Category:
(Selected in 5 of 13 streams)
14 - Cal Graphite Corp. monitored zinc monthly in process and storm water. Other categories monitored zinc semi-annually.

14 - Cal Graphite Corp., GP 0100
13 monitoring samples were reported with a detection frequency of 92% an average concentration ratio of 5.9 RMDL a maximum of 22.4 RMDL. 1 duplicate sample was reported (difference ratio = 0.2 RMDL).
Conclusion: Insufficient information to assess data.

Other Categories:
Other categories monitored on a semi-annual basis. QC sampling was not required.

Cyanide (Total) **RMDL = 0.005 mg/L**

Salt Category:
(Selected in 2 of 6 streams)
Cyanide was not detected in travelling blanks.
Conclusion: Data are acceptable.

Other Categories:
Selected in 4 streams from other categories.
Cyanide (Total) was monitored on a semi-annual basis only. QC sampling was not required; however, 2 companies did report split samples. Difference ratios are all less-than RMDL.

Dissolved Solids **RMDL = 20 mg/L**

Salt Category:
(Selected in 6 of 6 streams)
Average concentration ratios ranged from 8.8 to 8079 RMDL over the selected streams. Levels in travelling blanks are not significant compared to the levels in monitoring samples.
Conclusion: Data are acceptable

Other Categories:
Dissolved solids were not monitored in other categories.

Total Phosphorus **RMDL = 0.1 mg/L**

Salt Category:
(Selected in 3 of 6 streams)
Average concentration ratios range from 1.7 to 6.3 RMDL over the selected streams. Phosphorus was detected in only one travelling blank (1.1 RMDL).
Conclusion: Data are acceptable.

Other Categories:
Total phosphorus was monitored on a semi-annual basis in other categories. QA/QC sampling was not required.

Fluoride **RMDL = 0.1 mg/L**

Clay and Shale Category:
(Selected in 6 of 6 streams)
Fluoride was monitored on a monthly basis in the clay and shale category. Average concentration ratios ranging from 4.4 to 20.3 RMDL. Duplicate difference ratios are not significant compared to monitoring concentration ratios.
Conclusion: Data are acceptable.

Other Categories:
Fluoride was not monitored in other categories.

Pentachlorophenol **RMDL = 1.3 ug/L**

Salt Category:
(Selected in 1 of 6 streams)
Pentachlorophenol was detected in 2 of 2 samples from 22 - Sifto Canada Inc., MW 0200 at 1.85 and 4.38 RMDL and not detected in either of 2 travelling blanks reported. Recoveries reported for 2 travelling spiked blanks were 95 and 100%. Conclusion: Data are acceptable

Other Categories:
Pentachlorophenol was monitored on a semi-annual basis in all other categories. Pentachlorophenol was selected in 4 other streams because the RMDL was not met. 2 monitoring results were reported for each of these streams all under method code BC044A. The data for 13 - Timminco Ltd. show 1 result at 1.54 RMDL with a <DL code and 1 result at 2.46 RMDL with no remark code. This stream should be reclassified as priority 3. The data for 20 - Luzenac MW 0100, PW 0200 and 19 - Canada Talc Ltd. MW 0100 (6 results) are reported at 1.54 RMDL but are qualified by <DL remark codes. These data are within 1.6 RMDL; therefore, they can be accepted for the absence of pentachlorophenol at levels significant compared to the RMDL.

Conclusion: Data for 22 - Sifto Canada Inc., MW 0200 are acceptable. Data for 20 - Luzenac MW 0100, PW 0200 and 19 - Canada Talc Ltd. MW 0100 can be accepted for the absence of pentachlorophenol. Remove 20 - Luzenac MW 0100, PW 0200 and 19 - Canada Talc Ltd. MW 0100 from the list selected for pentachlorophenol.

Total Kjeldahl Nitrogen **RMDL = 0.5 mg/L**

Salt Category:
(Selected in 5 of 6 streams)
Average concentration ratios range from 0.73 to 7.35 RMDL over the selected streams. Kjeldahl nitrogen was not detected in travelling blanks.
Conclusion: Data are acceptable

Other Categories:
Kjeldahl nitrogen was not monitored in other categories.

4 - Nitrophenol **RMDL = 1.4 ug/L**
(Selected in 4 streams)
All streams were selected because the RMDL was not met.
2 monitoring samples were reported for each stream all at 3.57 RMDL with a <DL remark code (method BC044A). These results are not within 1.6 RMDL; therefore, they will not be accepted as verifying the presence or absence of 4 - nitrophenol.
Conclusion: Data are unacceptable.

Toluene **RMDL = 0.5 ug/L**

Salt Category:
(Selected in 1 of 6 streams)
Selected at 22 - Sifto Canada Inc. MW 0200. 2 monitoring samples were reported both at 1.8 RMDL without a remark code. Toluene was not detected in either of 2 travelling blanks.
Recoveries from 2 travelling spiked blanks were 91 and 162%.
Conclusion: Data are acceptable.

Other Categories:
(Selected in 3 other streams)
Toluene was monitored semi-annually in all other categories and selected at: 20 - Luzenac MW 0100, PW 0200 and 19 - Canada Talc Ltd., MW 0100. 2 results were reported for each stream all under method BC041A. All of these results are reported at 1.1 RMDL with a <DL remark code. These data are within 1.6 RMDL; therefore, they can be accepted for the absence of toluene at levels significant compared to the RMDL.
Conclusion: Remove 20 - Luzenac MW 0100 and PW 0200 and 19 - Canada Talc Ltd. MW 0100 from the list of streams selected for toluene.

COD (Chemical Oxygen Demand) **RMDL = 10 mg/L**

Salt Category:
(Selected in 4 of 6 steams)
COD was monitored on a quarterly basis and only in the salt category. COD was found in 4 effluents; however, the data collected are of questionable value because COD analysis are prone to serious errors when chloride is present at a concentration above 5000 mg/L. In those effluents where COD was found LTA chloride concentrations ranged from 4,500 mg/L to 100,000 mg/L; therefore, COD data are not reliable.
Conclusion: Data are unacceptable.

Other Categories:
COD was not monitored in other categories.

Arsenic **RMDL = 5 ug/L**

Graphite/Gypsum/Nepheline Syenite/Talc Category
(Selected in 3 of 13 streams)

20 - Luzenac MW 0100.
12 monitoring samples were reported with a detection frequency of 100%, and average concentration ratio of 16.4 RMDL, a maximum of 22.6 RMDL. 5 duplicate/split samples were reported for Luzenac MW 0100. All show acceptable agreement (average concentration ratio = 16.4, minimum = 8.8 RMDL, maximum difference ratio = 3 RMDL).
Conclusion: Data are acceptable.

20 - Luzenac PW 0200
12 monitoring samples were reported with a detection frequency of 75%, an average concentration ratio of 1.6 RMDL a maximum of 2.8 RMDL. 1 duplicate sample was reported for Luzenac PW 0200 and shows poor agreement

Date	Monitoring	Duplicate
91/01/16	4 ug/L	73 ug/L

Conclusion: Insufficient information for this stream. Data should be accepted based on acceptable data for 20 - Luzenac MW 0100.

19 - Canada Talc MW 0100
14 monitoring samples were reported with a detection frequency of 86%, an average concentration ratio of 3.6 RMDL and a maximum of 6 RMDL. 5 split samples were reported with a maximum difference ratio = 1.6 RMDL.
Conclusion : Data are acceptable

Salt Category:
(Selected in 1 of 6 streams)

22 - The Canadian Salt Company MW 0300
2 monitoring samples were reported, 1 result at 3 RMDL without a remark code and 1 result at 6 RMDL with a < remark code. Arsenic was not detected in either of 2 travelling blanks.
Conclusion: Data are unacceptable.

Nickel **RMDL = 20 ug/L**
Selected in 3 streams based on semi-annual monitoring.
QC sampling was not required; however, 2 companies did report results of split samples. Split sample difference ratios are not significant compared to monitoring concentration ratios.
Conclusion: Precison is acceptable.

Cobalt **RMDL = 20 ug/L**
Cobalt was selected in 2 streams based on semi-annual monitoring. The maximum concentration ratio is 1.5 RMDL of the selected streams. 4 duplicate samples were reported with a maximum difference ratio is 2 RMDL.
Conclusion: Data are acceptable.

Copper **RMDL = 10 ug/L**
Copper was selected in 2 streams based on monthly monitoring. The maximum concentration ratio is 2 RMDL over the selected streams. Duplicate difference ratios (maximum 0.2 RMDL) are not significant compared to monitoring ratios; therefore, data are acceptable. Travelling blanks were not required; however, 2 were reported by 14 - Cal Graphite. Both are <RMDL.
Conclusion: Data are acceptable.

Cadmium **RMDL = 2 ug/L**

Selected in 2 streams based on monthly monitoring.

19 - Canada Talc Ltd. MW 0100
14 monitoring samples were reported with a detection frequency of 36% an average concentration ratio of 1.6 RMDL a maximum of 5 RMDL. 5 split samples were reported with a maximum difference ratio of 1.1 RMDL.
Conclusion: Data are acceptable

20 - Luzenac Inc. MW 0100
12 monitoring samples were reported with a detection frequency of 33%, an average concentration ratio of 2.1 RMDL and a maximum of 10 RMDL. 5 duplicate/split samples were reported with a maximum difference ratio of 3 RMDL.
Conclusion: Data are acceptable.

Molybdenum **RMDL = 20 ug/L**

Selected in 2 clay and shale category streams based on semi-annual monitoring (maximum concentration ratio = 3.2 RMDL). Reporting of QC data was not required.

Vanadium **RMDL = 30 ug/L**

Selected in 2 Chemical Lime/Magnesium category streams based on semi-annual monitoring. Reporting of QC data was not required.

Di-n-butyl phthalate **RMDL = 3.8 ug/L**

Selected in 2 streams, 15 - Westroc MW 0100 and 21 - Sifto MW 0200, based on semi-annual monitoring. Concentration ratios are 2.3 and 3.7 RMDL for Westroc and 1.1 and 39 RMDL for Sifto. Di-n-butyl phthalate was not detected in travelling blanks. Recoveries from travelling spiked blanks were acceptable (73 to 134%).
Conclusion: Data are acceptable.

Thiocyanates, Filtered **RMDL = 5 mg/L**

Selected in 2 of 6 salt category streams.
Thiocyanates were monitored quarterly in all salt category streams.

22 - Sifto Canada Ltd., MW 0200
2 results were reported, one at 200 RMDL and one at 100 RMDL. Both results are qualified by < remark codes.
Conclusion: These data are not within 1.6 RMDL; therefore, they will not be accepted to verify the presence or absence of thiocyanates, filtered.

22 - Sifto Canada Ltd., PW 0100
4 results were reported, three qualified by < remark codes at 100, 20 and 10 RMDL. The fourth result is reported as 0.001 mg/L <DL.
Conclusion: Data do not verify the absence of presence of thiocyanates, filtered.

Antimony **RMDL = 5 ug/L**

Selected in 2 streams based on semi-annual monitoring.

22 - The Canadian Salt Company, MW 0300
Selected because the RMDL was not met. 2 samples were reported, 1 result at 1 RMDL with no remark code and 1 result at 2 RMDL with a < remark code.
Conclusion: Remove from the list of selected parameters. Monitoring for assessment may be required.

19 - Canada Talc Ltd. MW 0100
Selected because the RMDL was not met. 2 results were reported, both at 1.2 RMDL with <DL remark codes. The data are within 1.6 RMDL; therefore, they can be accepted for the absence of antimony at levels significant compared to the RMDL.
Conclusion: Remove 19 - Canada Talc Ltd., MW 0100 from the list of those selected for antimony.

Unique Parameters (ie. Selected for only 1 company)

TOC, Total Organic Carbon **RMDL = 5 mg/L**

Salt Category:
(Selected in 2 of 6 streams)
TOC was monitored quarterly in all salt category streams.
2 monitoring results and 2 travelling blanks were reported for each stream. TOC was not detected in travelling blanks.
Conclusion: Data are acceptable

Other Categories:
TOC was not monitored in other streams.

Cyanates, Filtered **RMDL = 5 mg/L**

Selected at 22 - Sifto Canada Inc., MW 0200
2 results were reported, 1 at 200 RMDL and 1 at 100 RMDL, both qualified by < remark codes. These data are not within 1.6 RMDL; therefore, they will not be accepted for the absence of cyanates, filtered.
Conclusion: Data are unacceptable.

Phenanthrene **RMDL = 0.4 ug/L**

Selected at 10 - Reiss Lime Company Ltd. based on 2 monitoring samples (1.3 and 6 RMDL). Phenanthrene was not detected in either of 2 travelling blanks and recoveries from 2 travelling spiked blanks are acceptable (100 and 128%)
Conclusion: Data are acceptable.

p-Cresol **RMDL = 3.5 ug/L**

Selected at 10 - Reiss Lime Company Ltd. 12 monitoring samples were reported with a detection frequency of 92% an average concentration ratio of 27 RMDL and a maximum of 47 RMDL.
6 travelling blanks were reported, p-cresol was not detected.
4 duplicate samples were reported (maximum difference ratio = 3.4 RMDL). All show acceptable agreement.
6 travelling spiked blanks were reported. 2 have low recovery (33 and 49%). The remaining 4 samples have recoveries between 60.5 and 88%.
Conclusion: Data are acceptable.

o-Cresol **RMDL = 3.7 ug/L**

Selected at 10 - Reiss Lime Company Ltd. 12 monitoring samples were reported with a detection frequency of 100% an average concentration ratio of 28.7 RMDL a maximum of 48 RMDL. o-Cresol was not detected in any of 6 travelling blanks reported.
4 duplicate samples were reported. All show acceptable agreement.
6 travelling spiked blanks were reported. 5 samples had acceptable recoveries
in the range 63 to 109% whereas 1 sample showed low recovery (28%).
Conclusion: Data are acceptable.

m-Cresol **RMDL = 3.4 ug/L**

Selected at 10 - Reiss Lime Company Ltd. 12 monitoring samples were reported with a detection frequency of 100%, an average concentration ratio of 24.8 RMDL and a maximum of 43.8 RMDL.
m-Cresol was not detected in travelling blanks (6 reported).
4 duplicate samples were reported. The results are given below. 2 show acceptable agreement, 2 show marginal agreement.

Date	Monitoring	Duplicate
90/10/09	61 ug/L	71 ug/L
90/12/11	76 ug/L	105 ug/L
91/03/19	85 ug/L	87 ug/L
91/06/18	130 ug/L	104 ug/L

6 travelling spiked blanks were reported with a minimum recovery of 60%, average of 135% and a maximum of 197%. 3 samples had recoveries greater than 165%; therefore, some results may be overestimated.
Conclusion: Data may be overestimated.

Phenol **RMDL = 2.4 ug/L**

Selected at 10 - Reiss Lime Company Ltd. 12 monitoring samples were reported with a detection frequency of 100%, an average concentration ratio of 90 RMDL and a maximum of 217 RMDL.
Phenol was not detected in travelling blanks (6 reported).
4 duplicate samples were reported. All showed acceptable agreement.
6 travelling spiked blanks were reported (minimum recovery = 21%, maximum = 74%). 3 results showed less than 48% recovery; therefore, results may be underestimated.
Conclusion: Data may be underestimated.

2,4-Dimethylphenol **RMDL = 7.3 ug/L**

Selected at 10 - Reiss Lime Company Ltd. 12 monitoring samples were reported with a detection frequency of 75%, an average concentration ratio of 7.5 RMDL and a maximum of 20.4 RMDL.
2,4-dimethylphenol was not detected in travelling blanks (6 reported).
4 duplicate samples were reported; agreement is acceptable for all (maximum difference ratio = 0.8 RMDL)
6 travelling spiked blanks were reported. 5 samples showed recovery in the range 67 to 109. 1 sample showed low recovery (36%).
Conclusion: Data are acceptable.

1,2 - Dichloroethane **RMDL = 0.8 ug/L**

Selected at 10 - Reiss Lime Company Ltd., LP 0100 because the RMDL was not met. 2 monitoring samples were reported; both at 1.02 RMDL with a <DL remark code. These data are within 1.6 RMDL; therefore, they will be accepted as evidence for the absence of 1,2-dichloroethane at levels significant compared to the RMDL.
1,2-dichloroethane was not detected in travelling blanks (2 reported) and recoveries from 2 travelling spiked blanks were acceptable (66% and 97%).
Conclusion: Remove from list of priority 1 parameters.

Cyanide, Weak Acid Dissociable (WAD) **RMDL = 0.005 mg/L**

Selected at 22 - The Canadian Salt Company Ltd. based on 2 samples (4.6 and 20 RMDL). Cyanide (WAD) was not detected in either of 2 travelling blanks reported.
Conclusion: Data are acceptable.

APPENDIX B

QC Data Tables

Total suspended solids - Monitoring Samples:

RMDL = 5 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Cement Category - *Priority 1*										
02 - LaFarge, Bath	SW 0400	3	FH	100	100	100	5.20	7.60	7.60	6.80
06 - St. Marys, St Marys	SW 0500	10	FH	100	100	90	3.20	12.40	123.00	43.02
05 - St. Marys, Bowmanville	QW 0200	121	FH	100	89	74	1.00	8.60	910.40	40.43
03 - LaFarge, Woodstock	QW 0200	112	FH	99	94	70	.80	9.50	119.80	20.58
05 - St. Marys, Bowmanville	CP 0100	145	FH	99	91	53	.60	5.20	1,026.80	23.03
02 - LaFarge, Bath	QW 0300	143	FM	94	72	48	.20	4.40	104.00	11.18
03 - LaFarge, Woodstock	CP 0100	143	FH	93	82	58	.20	7.60	908.20	46.38
04 - Essroc Canada Inc.	CP 0300	149	FM	87	66	28	.20	2.60	106.80	6.34
01 - St. Lawrence Cement	CP 0100	151	FL	80	47	22	.20	1.80	69.40	4.17
06 - St. Marys, St Marys	QW 0200	139	FM	78	50	25	.20	2.00	226.00	9.01
04 - Essroc Canada Inc.	QW 0400	119	FL	72	47	33	.20	1.60	43.40	6.31
06 - St. Marys, St Marys	SW 0400	6	FM	67	67	17	.20	2.20	132.00	23.30
06 - St. Marys, St Marys	CP 0100	153	FL	60	37	19	.20	1.40	59.00	3.68
02 - LaFarge, Bath	CP 0200	144	FL	49	21	10	.20	1.00	25.60	2.12
Chemical Lime/Magnesium Category - *Priority 1*										
10 - Reiss Lime Company Ltd.	LP 0100	127	FM	89	74	28	.40	3.40	28.00	3.82
08 - Beachvilime Ltd., East	LP 0100	157	FM	84	71	40	.40	3.60	19.20	4.75
09 - Guelph Dolime	LP 0200	154	FM	79	58	24	.10	2.40	108.40	4.68
11 - Steetley Quarry Products	LP 0100	143	FL	76	50	6	1.00	1.88	12.80	2.25
12 - Beachvilime Ltd., West	LP 0100	156	FM	72	51	24	.10	2.00	902.20	10.89
07 - Stelco Inc.	LP 0100	109	FL	61	17	1	.42	1.00	9.30	1.40
13 - Timminco Ltd.	SW 0200	12	FL	50	17	17	.60	1.00	8.20	2.08
09 - Guelph Dolime	LP 0100	155	IH	33	15	8	.10	.70	25.00	1.68
Chemical Lime/Magnesium Category - *Priority 2*										
13 - Timminco Ltd.	MP 0100	158	IL	11	1	0	.60	.60	2.40	.68
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
16 - CGC Inc.	GYP 0200	157	FM	97	83	33	.84	3.60	400.00	7.90
17 - Domtar Inc.	MW 0400	29	FH	97	90	86	.84	13.00	102.00	23.61
17 - Domtar Inc.	GYP 0200	157	FM	92	60	17	.84	2.40	280.00	5.80
17 - Domtar Inc.	MW 0300	156	FM	90	54	13	.84	2.00	440.00	6.26
17 - Domtar Inc.	MW 0100	109	FM	84	54	24	.84	2.00	360.00	8.54
16 - CGC Inc.	MW 0100	157	FL	83	42	11	.84	1.60	84.00	3.52
15 - Westroc Industries Ltd.	MW 0100	156	FL	62	40	6	.20	1.40	17.60	2.10
18 - Unimin Canada Ltd.	PW 0100	83	FM	52	51	40	.20	2.20	9,520.00	124.00
14 - Cal Graphite Corp.	GP 0100	138	FL	49	33	7	1.00	1.00	27.20	2.26
19 - Canada Talc Ltd.	MW 0100	146	IM	34	20	9	.20	.60	19.40	1.88
20 - Luzenac Inc.	PW 0200	143	IM	31	20	8	.40	.60	100.40	3.38
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 2*										
20 - Luzenac Inc.	MW 0100	144	IL	10	3	1	.40	.60	8.60	.74
Salt Category - *Priority 1*										
21 - Sifto Canada Inc.	MW 0200	151	FH	100	100	97	2.40	35.60	488.00	70.05
22 - The Canadian Salt Company	DC 0500	76	FH	100	97	78	1.76	8.01	716.60	45.65
22 - The Canadian Salt Company	MW 0300	26	FH	100	96	73	1.66	6.40	53.18	9.57
22 - The Canadian Salt Company	IW 0600	122	FL	81	46	20	.59	1.72	73.20	3.80
22 - The Canadian Salt Company	PW 0100	159	FL	76	42	11	.55	1.64	35.22	2.67
21 - Sifto Canada Inc.	PW 0100	152	FL	51	30	11	.20	1.00	190.00	4.45

Total suspended solids - Monitoring Samples:

RMDL = 5 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Clay and Shale Category - ***Priority 1***										
23 - Brampton Brick Ltd.	SW 0100	3	FH	100	100	100	6.80	7.20	22.40	12.13
24 - Canada Brick, Burlington	SW 0100	10	FH	100	100	70	4.00	6.20	300.00	56.66
26 - Canada Brick, Gloucester	SW 0100	5	FH	100	100	60	2.20	11.60	46.00	20.64
25 - Canada Brick, Cooksville	SW 0100	9	FH	100	78	78	1.00	7.00	48.00	13.89
27 - Canada Brick, Streetsville	SW 0100	12	FH	92	92	58	.84	5.10	36.00	9.67
25 - Canada Brick, Cooksville	SW 0200	9	FH	89	78	67	.84	9.80	174.00	34.76
Quarries Category - ***Priority 1***										
29 - Amherst Quarries Ltd.	QW 0100	49	FM	86	51	8	.72	2.00	11.00	2.52
39 - Bertrand and Frere	QW 0100	22	FL	77	50	36	.60	1.90	89.00	9.21
28 - 3M Canada Inc.	QW 0100	10	FL	70	50	0	.20	1.90	3.80	1.80
36 - Flamboro Quarries Ltd.	QW 0100	51	FL	63	35	8	.72	1.00	17.60	2.26
42 - Nelson Quarry	WW 0200	52	FL	60	33	15	.40	1.30	28.60	2.87
37 - N & S Francon Quarries	QW 0100	47	FL	55	32	4	.60	1.00	7.80	1.74
32 - Permanent Concrete Ltd.	QW 0100	52	FL	54	25	6	.60	1.00	7.00	1.59
41 - Milton Limestone	QW 0100	52	FL	52	12	0	.72	1.00	4.40	1.26
35 - Fallowfield Quarry	QW 0100	10	FL	50	20	20	.60	.93	15.60	2.83
31 - Carden Quarry	QW 0100	39	FL	46	18	10	.40	.80	17.80	2.12
33 - Dufferin Quarry	QW 0100	49	IL	35	14	0	.72	.72	4.40	1.14
43 - Richier Quarry	QW 0100	22	IL	32	9	0	.60	.68	2.20	.92
44 - Ridegemount Quarries Ltd.	QW 0100	32	IH	31	9	6	.40	.40	8.80	1.13
42 - Nelson Quarry	QW 0100	49	IH	31	24	16	.40	.40	830.00	22.61
38 - R.E. Law Quarry	QW 0100	50	IL	30	10	0	.40	.40	3.40	.85
45 - Uhthoff Quarry	QW 0100	50	IL	22	10	2	.40	.40	38.00	1.56
46 - Allan G. Cook Ltd.	QW 0100	42	IL	21	10	0	.72	.72	4.60	.99
Sand and Gravel Category - ***Priority 1***										
47 - Kam Aggregates Ltd.	WW 0100	21	FM	100	81	33	1.40	4.20	25.90	5.48

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Total suspended solids - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 2***							
13 - Timminco Ltd.	MP 0100	1	0	.60	.60	.60	.60
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***							
14 - Cal Graphite Corp.	GP 0100	1	0	1.00	1.00	1.00	1.00
Salt Category - ***Priority 1***							
22 - The Canadian Salt Company	PW 0100	1	0	1.00	1.00	1.00	1.00

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Total suspended solids - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Cement Category - ***Priority 1***						
03 - LaFarge, Woodstock	CP 0100	12	.00	.70	39.00	5.17
05 - St. Marys, Bowmanville	CP 0100	11	.00	.40	8.40	1.22
04 - Essroc Canada Inc.	CP 0300	11	.00	.60	3.80	1.11
01 - St. Lawrence Cement	CP 0100	11	.00	.40	2.00	.64
02 - LaFarge, Bath	CP 0200	10	.00	.20	3.40	.52
06 - St. Marys, St Marys	CP 0100	12	.00	.20	.80	.33
Chemical Lime/Magnesium Category - ***Priority 1***						
10 - Reiss Lime Company Ltd.	LP 0100	12	.00	.50	4.80	.97
09 - Guelph Dolime	LP 0200	9	.00	.40	2.00	.69
12 - Beachvilime Ltd., West	LP 0100	9	.00	.60	1.40	.62
08 - Beachvilime Ltd., East	LP 0100	9	.00	.40	1.20	.58
11 - Steetley Quarry Products	LP 0100	18	.00	.20	2.40	.35
09 - Guelph Dolime	LP 0100	10	.00	.15	.80	.26
07 - Stelco Inc.	LP 0100	10	.00	.01	.20	.08
Chemical Lime/Magnesium Category - ***Priority 2***						
13 - Timminco Ltd.	MP 0100	2	.00	.10	.20	.10
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***						
16 - CGC Inc.	MW 0100	12	.00	.50	8.00	1.35
15 - Westroc Industries Ltd.	MW 0100	12	.00	.50	3.60	.83
18 - Unimin Canada Ltd.	PW 0100	12	.00	.30	4.00	.67
17 - Domtar Inc.	MW 0300	12	.00	.38	1.80	.63
19 - Canada Talc Ltd.	MW 0100	5	.00	.00	.20	.04
20 - Luzenac Inc.	PW 0200	1	.00	.00	.00	.00
14 - Cal Graphite Corp.	GP 0100	2	.00	.00	.00	.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 2***						
20 - Luzenac Inc.	MW 0100	7	.00	.00	.00	.00
Clay and Shale Category - ***Priority 1***						
26 - Canada Brick, Gloucester	SW 0100	4	.00	2.40	6.00	2.70
24 - Canada Brick, Burlington	SW 0100	4	.00	.40	8.00	2.20
23 - Brampton Brick Ltd.	SW 0100	1	1.20	1.20	1.20	1.20
27 - Canada Brick, Streetsville	SW 0100	4	.00	.90	2.00	.95
25 - Canada Brick, Cooksville	SW 0200	2	.16	.48	.80	.48
25 - Canada Brick, Cooksville	SW 0100	5	.16	.40	.80	.47
Quarries Category - ***Priority 1***						
42 - Nelson Quarry	QW 0100	12	.00	.10	52.40	4.93
31 - Carden Quarry	QW 0100	10	.00	.10	9.40	1.46
42 - Nelson Quarry	WW 0200	12	.00	.40	2.20	.68
44 - Ridegemount Quarries Ltd.	QW 0100	9	.00	.20	2.40	.49
38 - R.E. Law Quarry	QW 0100	11	.00	.20	1.60	.44
41 - Milton Limestone	QW 0100	12	.00	.08	1.08	.22
29 - Amherst Quarries Ltd.	QW 0100	10	.00	.20	.40	.21
37 - N & S Francon Quarries	QW 0100	1	.20	.20	.20	.20
36 - Flamboro Quarries Ltd.	QW 0100	10	.00	.10	.60	.16
45 - Uhthoff Quarry	QW 0100	11	.00	.00	.80	.13
33 - Dufferin Quarry	QW 0100	10	.00	.00	.20	.05
46 - Allan G. Cook Ltd.	QW 0100	11	.00	.00	.00	.00
28 - 3M Canada Inc.	QW 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Total suspended solids - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
11 - Steetley Quarry Products	LP 0100	30	.00	.24	3.68	.43
Chemical Lime/Magnesium Category - ***Priority 2***						
13 - Timminco Ltd.	MP 0100	9	.00	.00	.40	.09
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***						
19 - Canada Talc Ltd.	MW 0100	8	.00	.03	.40	.10
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 2***						
20 - Luzenac Inc.	MW 0100	7	.00	.00	.00	.00
Salt Category - ***Priority 1***						
22 - The Canadian Salt Company	DC 0500	75	.00	.54	31.80	2.16
Quarries Category - ***Priority 1***						
46 - Allan G. Cook Ltd.	QW 0100	1	1.60	1.60	1.60	1.60
39 - Bertrand and Frere	QW 0100	5	.00	.80	2.40	1.04
41 - Milton Limestone	QW 0100	1	.80	.80	.80	.80
43 - Richier Quarry	QW 0100	3	.00	.20	.90	.37
35 - Fallowfield Quarry	QW 0100	4	.20	.30	.40	.30
37 - N & S Francon Quarries	QW 0100	11	.00	.10	2.00	.29
33 - Dufferin Quarry	QW 0100	1	.20	.20	.20	.20
32 - Permanent Concrete Ltd.	QW 0100	12	.00	.15	.20	.11
29 - Amherst Quarries Ltd.	QW 0100	1	.00	.00	.00	.00
36 - Flamboro Quarries Ltd.	QW 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Total suspended solids - Lab Corrections of Monitoring Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
11 Steetley Quarry Products	LP 0100	6	.00	.08	.30	.11

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Monitoring Sample Concentration and the Corrected Monitoring Sample Concentration Divided by the Regulation Method Detection Limit.

Oil and grease - Monitoring Samples:

RMDL = 1 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Cement Category - *Priority 1*										
03 - LaFarge, Woodstock	CP 0100	143	FM	79	64	30	1.00	2.00	46.00	4.28
05 - St. Marys, Bowmanville	QW 0200	119	FM	79	64	14	1.00	2.00	34.00	3.20
02 - LaFarge, Bath	SW 0400	3	FL	67	33	0	1.00	1.00	2.00	1.33
05 - St. Marys, Bowmanville	CP 0100	145	IL	37	14	2	1.00	1.00	8.00	1.33
06 - St. Marys, St Marys	QW 0200	139	IM	34	17	5	1.00	1.00	16.00	1.57
03 - LaFarge, Woodstock	QW 0200	112	IL	31	14	5	1.00	1.00	14.00	1.43
04 - Essroc Canada Inc.	CP 0300	149	IL	30	14	5	1.00	1.00	15.00	1.45
01 - St. Lawrence Cement	CP 0100	152	IL	29	13	0	.10	1.00	4.00	1.15
06 - St. Marys, St Marys	CP 0100	152	IM	28	16	1	1.00	1.00	6.00	1.24
04 - Essroc Canada Inc.	QW 0400	121	IM	22	12	3	1.00	1.00	7.00	1.28
02 - LaFarge, Bath	CP 0200	143	IM	16	9	0	1.00	1.00	4.00	1.14
02 - LaFarge, Bath	QW 0300	144	IL	16	6	0	1.00	1.00	3.00	1.06
Chemical Lime/Magnesium Category - *Priority 1*										
10 - Reiss Lime Company Ltd.	LP 0100	122	FM	83	65	10	1.00	2.00	112.00	3.28
11 - Steetley Quarry Products	LP 0100	143	FL	41	13	3	1.00	1.00	7.40	1.44
08 - Beachvilime Ltd., East	LP 0100	157	IL	35	13	4	.10	.60	12.50	1.17
09 - Guelph Dolime	LP 0200	157	IL	35	12	4	.10	.70	8.40	1.10
09 - Guelph Dolime	LP 0100	154	IL	34	9	1	.10	.60	9.10	1.00
12 - Beachvilime Ltd., West	LP 0100	142	IL	32	15	3	.10	.60	10.10	1.19
07 - Stelco Inc.	LP 0100	109	IL	18	3	0	.96	.96	2.87	1.06
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
15 - Westroc Industries Ltd.	MW 0100	156	FH	97	96	90	1.00	9.00	113.00	12.84
17 - Domtar Inc.	MW 0400	29	FM	93	62	24	.96	2.30	16.00	3.83
14 - Cal Graphite Corp.	GP 0100	135	FL	60	21	1	1.00	1.20	5.00	1.51
17 - Domtar Inc.	MW 0100	107	FL	52	26	10	.96	1.10	18.00	2.24
16 - CGC Inc.	GYP 0200	155	IL	15	5	1	.96	.96	9.40	1.16
16 - CGC Inc.	MW 0100	156	IL	14	4	1	.96	.96	5.00	1.07
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 2*										
17 - Domtar Inc.	MW 0300	154	IH	14	2	1	.96	.96	7.20	1.09
Salt Category - *Priority 1*										
21 - Sifto Canada Inc.	MW 0200	150	FH	100	100	100	10.00	115.00	4,145.00	248.75
22 - The Canadian Salt Company	MW 0300	26	FM	96	73	27	1.00	3.15	62.50	6.76
22 - The Canadian Salt Company	DC 0500	76	FM	78	61	16	1.00	2.35	38.40	4.00
21 - Sifto Canada Inc.	PW 0100	152	IL	36	12	2	1.00	1.00	7.60	1.27
Salt Category - *Priority 2*										
22 - The Canadian Salt Company	PW 0100	159	IL	11	3	1	1.00	1.00	6.60	1.09
Clay and Shale Category - *Priority 1*										
27 - Canada Brick, Streetsville	SW 0100	12	FL	92	50	0	.96	1.90	2.70	1.84
25 - Canada Brick, Cooksville	SW 0100	9	FL	56	22	0	.96	1.00	3.60	1.40
24 - Canada Brick, Burlington	SW 0100	10	IL	40	0	0	.96	.96	1.30	1.06

Oil and grease - Monitoring Samples:

RMDL = 1 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Quarries Category - ***Priority 1***										
28 - 3M Canada Inc.	QW 0100	10	FL	100	10	0	1.00	2.00	2.00	1.74
44 - Ridegemount Quarries Ltd.	QW 0100	32	FL	59	6	0	1.00	1.20	4.00	1.31
45 - Uhthoff Quarry	QW 0100	50	FL	58	20	0	.80	1.00	4.00	1.38
42 - Nelson Quarry	WW 0200	50	FL	58	12	0	.80	1.00	4.00	1.27
29 - Amherst Quarries Ltd.	QW 0100	49	FL	55	45	16	.23	1.50	22.40	2.88
42 - Nelson Quarry	QW 0100	47	FL	53	15	4	.80	1.00	6.00	1.42
36 - Flamboro Quarries Ltd.	QW 0100	51	FL	53	37	8	.23	1.30	39.70	2.44
46 - Allan G. Cook Ltd.	QW 0100	40	FL	53	38	13	.23	1.00	64.00	4.47
38 - R.E. Law Quarry	QW 0100	50	FL	52	14	2	.80	1.00	9.00	1.41
33 - Dufferin Quarry	QW 0100	52	FL	52	42	10	.23	1.00	12.00	2.05
41 - Milton Limestone	QW 0100	52	FL	50	44	12	.23	1.10	14.20	2.19
31 - Carden Quarry	QW 0100	38	IL	34	5	0	.80	1.00	3.00	1.15
Sand and Gravel Category - ***Priority 1***										
47 - Kam Aggregates Ltd.	WW 0100	21	FM	100	76	10	1.00	2.50	7.40	2.96

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Oil and grease - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***							
14 - Cal Graphite Corp.	GP 0100	1	0	1.00	1.00	1.00	1.00
Salt Category - ***Priority 1***							
21 - Sifto Canada Inc.	PW 0100	4	50	1.00	2.00	4.00	2.25
21 - Sifto Canada Inc.	MW 0200	4	75	1.00	1.00	4.00	1.75
22 - The Canadian Salt Company	MW 0300	1	0	1.00	1.00	1.00	1.00
22 - The Canadian Salt Company	DC 0500	2	0	1.00	1.00	1.00	1.00
Salt Category - ***Priority 2***							
22 - The Canadian Salt Company	PW 0100	3	0	1.00	1.00	1.00	1.00

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Oil and grease - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Cement Category - *Priority 1*						
04 - Essroc Canada Inc.	CP 0300	11	.00	.00	12.00	1.36
03 - LaFarge, Woodstock	CP 0100	12	.00	1.00	6.00	1.17
06 - St. Marys, St Marys	CP 0100	12	.00	.00	2.00	.33
02 - LaFarge, Bath	CP 0200	11	.00	.00	2.00	.27
05 - St. Marys, Bowmanville	CP 0100	11	.00	.00	1.00	.09
01 - St. Lawrence Cement	CP 0100	11	.00	.00	1.00	.09
Chemical Lime/Magnesium Category - *Priority 1*						
10 - Reiss Lime Company Ltd.	LP 0100	12	.00	.00	2.00	.50
12 - Beachvilime Ltd., West	LP 0100	9	.00	.10	.90	.29
09 - Guelph Dolime	LP 0100	10	.00	.30	.72	.28
08 - Beachvilime Ltd., East	LP 0100	8	.00	.05	1.12	.23
11 - Steetley Quarry Products	LP 0100	18	.00	.00	1.00	.18
09 - Guelph Dolime	LP 0200	9	.00	.10	.62	.16
07 - Stelco Inc.	LP 0100	10	.00	.00	.06	.01
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
15 - Westroc Industries Ltd.	MW 0100	12	1.00	4.00	17.00	5.00
14 - Cal Graphite Corp.	GP 0100	8	.00	.15	1.10	.26
16 - CGC Inc.	MW 0100	12	.00	.00	.60	.07
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 2*						
17 - Domtar Inc.	MW 0300	12	.00	.00	.54	.11
Salt Category - *Priority 1*						
22 - The Canadian Salt Company	DC 0500	75	.00	.40	6.80	.74
Clay and Shale Category - *Priority 1*						
27 - Canada Brick, Streetsville	SW 0100	4	.30	.50	1.94	.81
25 - Canada Brick, Cooksville	SW 0100	5	.00	.50	.90	.40
24 - Canada Brick, Burlington	SW 0100	4	.00	.25	.70	.30
Quarries Category - *Priority 1*						
46 - Allan G. Cook Ltd.	QW 0100	10	.00	.70	40.20	7.37
36 - Flamboro Quarries Ltd.	QW 0100	12	.00	.10	37.20	3.60
29 - Amherst Quarries Ltd.	QW 0100	11	.27	.97	6.07	1.65
33 - Dufferin Quarry	QW 0100	12	.00	.45	8.80	1.45
38 - R.E. Law Quarry	QW 0100	12	.00	.00	8.00	.93
41 - Milton Limestone	QW 0100	12	.00	.58	4.10	.87
45 - Uhthoff Quarry	QW 0100	12	.00	.00	5.00	.64
42 - Nelson Quarry	WW 0200	12	.00	.00	1.00	.26
44 - Ridegemount Quarries Ltd.	QW 0100	9	.00	.00	1.00	.22
31 - Carden Quarry	QW 0100	10	.00	.00	2.00	.20
42 - Nelson Quarry	QW 0100	12	.00	.00	1.00	.19
28 - 3M Canada Inc.	QW 0100	1	.10	.10	.10	.10

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Oil and grease - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
11 - Steetley Quarry Products	LP 0100	9	.00	.00	.60	.11

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Oil and grease - Lab Corrections of Monitoring Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
11 Steetley Quarry Products	LP 0100	4	.00	.00	.10	.03

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Monitoring Sample Concentration and the Corrected Monitoring Sample Concentration Divided by the Regulation Method Detection Limit.

DOC - Monitoring Samples:

RMDL = .5 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Cement Category - *Priority 1*										
04 - Essroc Canada Inc.	CP 0300	2	FH	100	100	100	7.00	8.10	9.20	8.10
04 - Essroc Canada Inc.	QW 0400	2	FH	100	100	100	5.20	6.90	8.60	6.90
05 - St. Marys, Bowmanville	QW 0200	2	FH	100	100	100	5.40	5.70	6.00	5.70
02 - LaFarge, Bath	CP 0200	2	FM	100	100	50	4.40	6.00	7.60	6.00
06 - St. Marys, St Marys	QW 0200	2	FM	100	100	0	4.00	4.30	4.60	4.30
05 - St. Marys, Bowmanville	CP 0100	2	FM	100	100	0	4.00	4.20	4.40	4.20
03 - LaFarge, Woodstock	CP 0100	2	FM	100	100	0	3.20	3.80	4.40	3.80
01 - St. Lawrence Cement	CP 0100	2	FM	100	100	0	3.60	3.80	4.00	3.80
06 - St. Marys, St Marys	CP 0100	2	FM	100	100	0	3.40	3.70	4.00	3.70
03 - LaFarge, Woodstock	QW 0200	2	FM	100	100	0	3.00	3.30	3.60	3.30
02 - LaFarge, Bath	QW 0300	2	FL	100	50	0	1.80	2.20	2.60	2.20
Chemical Lime/Magnesium Category - *Priority 1*										
13 - Timminco Ltd.	MP 0100	2	FH	100	100	100	12.96	19.48	26.00	19.48
10 - Reiss Lime Company Ltd.	LP 0100	2	FH	100	100	100	10.20	12.70	15.20	12.70
08 - Beachvilime Ltd., East	LP 0100	2	FH	100	100	100	5.00	5.40	5.80	5.40
12 - Beachvilime Ltd., West	LP 0100	2	FM	100	100	50	3.80	12.90	22.00	12.90
09 - Guelph Dolime	LP 0100	2	FM	100	100	50	4.20	4.70	5.20	4.70
09 - Guelph Dolime	LP 0200	2	FM	100	100	0	4.00	4.30	4.60	4.30
07 - Stelco Inc.	LP 0100	2	FM	100	100	0	2.20	2.30	2.40	2.30
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
20 - Luzenac Inc.	MW 0100	2	FH	100	100	100	8.66	27.33	46.00	27.33
19 - Canada Talc Ltd.	MW 0100	2	FH	100	100	100	11.64	22.12	32.60	22.12
20 - Luzenac Inc.	PW 0200	2	FH	100	100	100	14.14	15.67	17.20	15.67
17 - Domtar Inc.	MW 0300	2	FH	100	100	100	14.40	15.00	15.60	15.00
17 - Domtar Inc.	GYP 0200	2	FH	100	100	100	8.00	10.40	12.80	10.40
16 - CGC Inc.	MW 0100	2	FM	100	100	50	2.20	5.30	8.40	5.30
17 - Domtar Inc.	MW 0100	2	FM	100	100	0	2.80	3.10	3.40	3.10
16 - CGC Inc.	GYP 0200	2	FL	100	50	0	1.00	2.50	4.00	2.50
Salt Category - *Priority 1*										
21 - Sifto Canada Inc.	MW 0200	2	FH	100	100	100	10.60	360.40	710.20	360.40
22 - The Canadian Salt Company	DC 0500	2	FH	100	100	100	11.00	22.50	34.00	22.50
22 - The Canadian Salt Company	MW 0300	2	FH	100	100	100	18.20	22.10	26.00	22.10
22 - The Canadian Salt Company	PW 0100	4	FM	100	100	50	3.80	5.30	8.60	5.75
21 - Sifto Canada Inc.	PW 0100	4	FL	100	50	50	1.00	11.60	148.00	43.05
Clay and Shale Category - *Priority 1*										
26 - Canada Brick, Gloucester	SW 0100	2	FH	100	100	100	7.40	16.70	26.00	16.70
27 - Canada Brick, Streetsville	SW 0100	2	FH	100	100	100	7.80	9.90	12.00	9.90
25 - Canada Brick, Cooksville	SW 0100	2	FH	100	100	100	8.80	8.90	9.00	8.90
24 - Canada Brick, Burlington	SW 0100	2	FH	100	100	100	6.80	7.30	7.80	7.30
25 - Canada Brick, Cooksville	SW 0200	2	FM	100	100	50	4.80	6.70	8.60	6.70

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

DOC - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - ***Priority 1***							
21 - Sifto Canada Inc.	PW 0100	4	25	.20	.30	2.00	.70
22 - The Canadian Salt Company	PW 0100	4	0	.70	.70	.70	.70
22 - The Canadian Salt Company	MW 0300	2	0	.70	.70	.70	.70
22 - The Canadian Salt Company	DC 0500	2	0	.70	.70	.70	.70
21 - Sifto Canada Inc.	MW 0200	2	0	.20	.20	.20	.20

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

DOC - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
13 - Timminco Ltd.	MP 0100	2	.18	5.09	10.00	5.09
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***						
20 - Luzenac Inc.	MW 0100	2	2.00	3.06	4.12	3.06
19 - Canada Talc Ltd.	MW 0100	2	.78	1.09	1.40	1.09

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Nitrate + Nitrite - Monitoring Samples: **RMDL = .25 mg/L**

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Cement Category - *Priority 1*										
02 - LaFarge, Bath	QW 0300	2	FH	100	100	100	25.60	26.40	27.20	26.40
04 - Essroc Canada Inc.	QW 0400	2	FH	100	100	100	13.60	24.60	35.60	24.60
05 - St. Marys, Bowmanville	QW 0200	2	FH	100	100	100	8.40	8.60	8.80	8.60
06 - St. Marys, St Marys	SW 0400	7	FH	100	100	86	2.12	16.80	44.00	16.93
03 - LaFarge, Woodstock	CP 0100	2	FM	100	100	50	3.96	4.98	6.00	4.98
06 - St. Marys, St Marys	QW 0200	2	FM	100	100	0	3.24	3.82	4.40	3.82
06 - St. Marys, St Marys	CP 0100	2	FM	100	100	0	2.84	3.62	4.40	3.62
01 - St. Lawrence Cement	CP 0100	2	FM	100	100	0	2.24	2.28	2.32	2.28
03 - LaFarge, Woodstock	QW 0200	2	FL	100	50	50	1.68	3.84	6.00	3.84
05 - St. Marys, Bowmanville	CP 0100	2	FL	100	50	0	1.36	2.02	2.68	2.02
02 - LaFarge, Bath	CP 0200	2	FL	100	0	0	1.08	1.16	1.24	1.16
06 - St. Marys, St Marys	SW 0500	11	FM	91	91	45	.10	4.80	6.80	4.54
02 - LaFarge, Bath	SW 0400	3	FL	67	33	0	.84	1.44	2.52	1.60
Cement Category - *Priority 2*										
04 - Essroc Canada Inc.	CP 0300	2	NO	0	0	0	.72	.74	.76	.74
Chemical Lime/Magnesium Category - *Priority 1*										
08 - Beachvilime Ltd., East	LP 0100	2	FH	100	100	100	10.40	14.20	18.00	14.20
12 - Beachvilime Ltd., West	LP 0100	2	FH	100	100	100	6.00	9.60	13.20	9.60
09 - Guelph Dolime	LP 0100	2	FH	100	100	100	6.00	7.00	8.00	7.00
10 - Reiss Lime Company Ltd.	LP 0100	2	FH	100	100	100	5.04	6.72	8.40	6.72
11 - Steetley Quarry Products	LP 0100	2	FM	100	100	50	3.52	6.10	8.68	6.10
09 - Guelph Dolime	LP 0200	2	FM	100	100	50	3.16	5.38	7.60	5.38
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
17 - Domtar Inc.	MW 0100	2	FH	100	100	100	28.80	38.40	48.00	38.40
19 - Canada Talc Ltd.	MW 0100	2	FH	100	100	100	10.40	19.80	29.20	19.80
15 - Westroc Industries Ltd.	MW 0100	2	FH	100	100	100	8.24	19.74	31.24	19.74
16 - CGC Inc.	MW 0100	2	FH	100	100	100	5.60	10.40	15.20	10.40
16 - CGC Inc.	GYP 0200	2	FH	100	100	100	10.40	10.40	10.40	10.40
20 - Luzenac Inc.	PW 0200	2	FM	100	100	50	4.84	14.22	23.60	14.22
17 - Domtar Inc.	MW 0300	2	FL	100	50	50	1.72	9.86	18.00	9.86
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 2*										
20 - Luzenac Inc.	MW 0100	2	NO	0	0	0	.10	.10	.10	.10
Salt Category - *Priority 1*										
22 - The Canadian Salt Company	MW 0300	11	FH	100	100	100	31.20	160.00	308.00	180.29
22 - The Canadian Salt Company	DC 0500	6	FH	100	100	67	3.68	5.80	9.20	6.01
21 - Sifto Canada Inc.	MW 0200	12	FH	100	92	58	1.24	8.66	25.08	9.45
22 - The Canadian Salt Company	PW 0100	12	FM	100	75	33	1.20	3.16	200.00	19.65
22 - The Canadian Salt Company	IW 0600	5	FM	100	60	40	1.76	2.96	8.00	4.37
Salt Category - *Priority 2*										
21 - Sifto Canada Inc.	PW 0100	12	NO	8	0	0	.28	.52	1.04	.57

Nitrate + Nitrite - Monitoring Samples:

RMDL = .25 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Clay and Shale Category - ***Priority 1***										
26 - Canada Brick, Gloucester	SW 0100	2	FH	100	100	100	14.00	21.20	28.40	21.20
25 - Canada Brick, Cooksville	SW 0200	2	FH	100	100	100	5.20	5.80	6.40	5.80
25 - Canada Brick, Cooksville	SW 0100	2	FM	100	100	0	2.08	2.58	3.08	2.58
24 - Canada Brick, Burlington	SW 0100	2	FL	100	50	50	1.08	6.54	12.00	6.54
27 - Canada Brick, Streetsville	SW 0100	2	FL	100	50	0	1.12	1.66	2.20	1.66

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Nitrate + Nitrite - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - ***Priority 1***							
21 - Sifto Canada Inc.	MW 0200	4	0	.16	.24	.36	.25
22 - The Canadian Salt Company	PW 0100	4	0	.10	.10	.15	.11
22 - The Canadian Salt Company	MW 0300	2	0	.10	.10	.10	.10
22 - The Canadian Salt Company	DC 0500	2	0	.10	.10	.10	.10
Salt Category - ***Priority 2***							
21 - Sifto Canada Inc.	PW 0100	4	0	.20	.36	.40	.33

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Nitrate + Nitrite - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
11 - Steetley Quarry Products	LP 0100	1	.08	.08	.08	.08
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
19 - Canada Talc Ltd.	MW 0100	2	.00	.00	.00	.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 2*						
20 - Luzenac Inc.	MW 0100	2	.00	.15	.30	.15

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit..

Sulphates - Monitoring Samples:

RMDL = 5 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Cement Category - ***Priority 1***										
02 - LaFarge, Bath	QW 0300	2	FH	100	100	100	166.00	182.00	198.00	182.00
03 - LaFarge, Woodstock	CP 0100	12	FH	100	100	100	92.00	123.00	182.00	127.83
03 - LaFarge, Woodstock	QW 0200	2	FH	100	100	100	92.00	99.00	106.00	99.00
02 - LaFarge, Bath	SW 0400	3	FH	100	100	100	24.00	70.00	86.00	60.00
04 - Essroc Canada Inc.	QW 0400	2	FH	100	100	100	34.00	60.00	86.00	60.00
06 - St. Marys, St Marys	SW 0500	11	FH	100	100	100	22.00	30.00	72.00	35.82
05 - St. Marys, Bowmanville	QW 0200	2	FH	100	100	100	28.00	34.00	40.00	34.00
06 - St. Marys, St Marys	QW 0200	2	FH	100	100	100	24.00	27.00	30.00	27.00
01 - St. Lawrence Cement	CP 0100	12	FH	100	100	100	6.00	7.60	60.00	12.05
05 - St. Marys, Bowmanville	CP 0100	12	FH	100	100	100	5.20	6.90	18.80	8.33
02 - LaFarge, Bath	CP 0200	12	FH	100	100	100	5.00	7.35	10.40	7.34
06 - St. Marys, St Marys	CP 0100	12	FH	100	100	92	4.80	50.00	70.00	44.40
06 - St. Marys, St Marys	SW 0400	7	FM	100	100	14	2.60	4.40	5.00	4.00
04 - Essroc Canada Inc.	CP 0300	12	FM	100	100	8	3.40	4.00	5.60	4.12
Chemical Lime/Magnesium Category - ***Priority 1***										
08 - Beachvilime Ltd., East	LP 0100	2	FH	100	100	100	70.00	135.00	200.00	135.00
11 - Steetley Quarry Products	LP 0100	2	FH	100	100	100	61.85	70.17	78.50	70.17
07 - Stelco Inc.	LP 0100	2	FH	100	100	100	48.20	49.50	50.80	49.50
09 - Guelph Dolime	LP 0200	2	FH	100	100	100	38.00	38.00	38.00	38.00
12 - Beachvilime Ltd., West	LP 0100	2	FH	100	100	100	30.00	38.00	46.00	38.00
09 - Guelph Dolime	LP 0100	2	FH	100	100	100	24.00	27.00	30.00	27.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***										
17 - Domtar Inc.	MW 0100	2	FH	100	100	100	300.00	310.00	320.00	310.00
16 - CGC Inc.	GYP 0200	2	FH	100	100	100	260.00	270.00	280.00	270.00
16 - CGC Inc.	MW 0100	2	FH	100	100	100	240.00	250.00	260.00	250.00
15 - Westroc Industries Ltd.	MW 0100	2	FH	100	100	100	44.00	212.00	380.00	212.00
17 - Domtar Inc.	GYP 0200	2	FH	100	100	100	150.00	195.00	240.00	195.00
17 - Domtar Inc.	MW 0300	2	FH	100	100	100	130.00	133.00	136.00	133.00
14 - Cal Graphite Corp.	GP 0100	2	FH	100	100	100	7.28	10.18	13.08	10.18
Salt Category - ***Priority 1***										
22 - The Canadian Salt Company	MW 0300	2	FH	100	100	100	800.00	820.00	840.00	820.00
21 - Sifto Canada Inc.	MW 0200	2	FH	100	100	100	340.00	350.00	360.00	350.00
21 - Sifto Canada Inc.	PW 0100	4	FH	100	100	100	112.00	142.00	240.00	159.00
22 - The Canadian Salt Company	DC 0500	2	FH	100	100	100	124.00	124.00	124.00	124.00
22 - The Canadian Salt Company	PW 0100	4	FH	100	100	75	3.40	9.80	24.00	11.75

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Sulphates - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*							
14 - Cal Graphite Corp.	GP 0100	2	0	.40	.40	.40	.40
Salt Category - *Priority 1*							
21 - Sifto Canada Inc.	MW 0200	2	50	.40	4.20	8.00	4.20
21 - Sifto Canada Inc.	PW 0100	4	0	.40	.40	.40	.40
22 - The Canadian Salt Company	MW 0300	2	0	.10	.15	.20	.15
22 - The Canadian Salt Company	DC 0500	2	0	.10	.15	.20	.15
22 - The Canadian Salt Company	PW 0100	4	0	.10	.10	.20	.13

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Sulphates - Lab Corrections of Travelling Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
14 - Cal Graphite Corp.	GP 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Blank Concentration and the Corrected Travelling Blank Concentration Divided by the Regulation Method Detection Limit.

Sulphates - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Cement Category - *Priority 1*						
06 - St. Marys, St Marys	CP 0100	4	.00	1.00	6.00	2.00
03 - LaFarge, Woodstock	CP 0100	4	.00	.00	2.00	.50
02 - LaFarge, Bath	CP 0200	4	.00	.15	.40	.17
05 - St. Marys, Bowmanville	CP 0100	3	.00	.20	.20	.13
04 - Essroc Canada Inc.	CP 0300	4	.00	.00	.40	.10
01 - St. Lawrence Cement	CP 0100	3	.00	.00	.20	.07

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Sulphates - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
11 - Steetley Quarry Products	LP 0100	1	1.00	1.00	1.00	1.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Sulphates - Lab Corrections of Monitoring Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***						
14 Cal Graphite Corp.	GP 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Monitoring Sample Concentration and the Corrected Monitoring Sample Concentration Divided by the Regulation Method Detection Limit.

Chlorides - Monitoring Samples: RMDL = 2 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Cement Category - ***Priority 1***										
05 - St. Marys, Bowmanville	QW 0200	2	FH	100	100	100	1,250.00	1,975.00	2,700.00	1,975.00
02 - LaFarge, Bath	QW 0300	2	FH	100	100	100	125.00	142.50	160.00	142.50
04 - Essroc Canada Inc.	QW 0400	2	FH	100	100	100	85.00	112.50	140.00	112.50
02 - LaFarge, Bath	SW 0400	3	FH	100	100	100	55.00	80.00	140.00	91.67
03 - LaFarge, Woodstock	CP 0100	12	FH	100	100	100	43.00	55.00	95.00	58.38
03 - LaFarge, Woodstock	QW 0200	2	FH	100	100	100	48.00	48.50	49.00	48.50
06 - St. Marys, St Marys	CP 0100	12	FH	100	100	100	22.00	29.50	105.00	38.38
01 - St. Lawrence Cement	CP 0100	12	FH	100	100	100	15.50	20.25	29.00	21.25
05 - St. Marys, Bowmanville	CP 0100	12	FH	100	100	100	6.50	13.75	41.50	18.88
06 - St. Marys, St Marys	QW 0200	2	FH	100	100	100	14.00	16.25	18.50	16.25
02 - LaFarge, Bath	CP 0200	12	FH	100	100	100	8.00	11.00	12.00	10.75
04 - Essroc Canada Inc.	CP 0300	12	FH	100	100	92	4.95	7.00	10.50	7.41
06 - St. Marys, St Marys	SW 0400	7	FH	100	100	71	3.35	6.50	9.00	6.36
06 - St. Marys, St Marys	SW 0500	11	FH	91	91	91	.10	65.00	465.00	104.65
Chemical Lime/Magnesium Category - ***Priority 1***										
09 - Guelph Dolime	LP 0100	2	FH	100	100	100	130.00	137.50	145.00	137.50
11 - Steetley Quarry Products	LP 0100	2	FH	100	100	100	76.65	81.50	86.35	81.50
09 - Guelph Dolime	LP 0200	2	FH	100	100	100	75.00	80.00	85.00	80.00
07 - Stelco Inc.	LP 0100	2	FH	100	100	100	49.00	49.50	50.00	49.50
12 - Beachvilime Ltd., West	LP 0100	2	FH	100	100	100	28.50	39.25	50.00	39.25
08 - Beachvilime Ltd., East	LP 0100	2	FH	100	100	100	28.50	33.50	38.50	33.50
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***										
15 - Westroc Industries Ltd.	MW 0100	2	FH	100	100	100	1,110.00	1,275.00	1,440.00	1,275.00
17 - Domtar Inc.	MW 0100	2	FH	100	100	100	65.00	77.50	90.00	77.50
17 - Domtar Inc.	MW 0300	2	FH	100	100	100	23.50	31.75	40.00	31.75
17 - Domtar Inc.	GYP 0200	2	FH	100	100	100	22.50	25.75	29.00	25.75
16 - CGC Inc.	GYP 0200	2	FH	100	100	100	15.00	18.00	21.00	18.00
16 - CGC Inc.	MW 0100	2	FH	100	100	100	15.00	15.75	16.50	15.75
Salt Category - ***Priority 1***										
22 - The Canadian Salt Company	MW 0300	26	FH	100	100	100	15,338.50	51,461.50	91,816.50	50,235.38
21 - Sifto Canada Inc.	MW 0200	151	FH	100	100	100	885.00	16,125.00	80,000.00	17,950.95
22 - The Canadian Salt Company	DC 0500	68	FH	100	100	100	5,267.00	16,596.00	26,149.00	15,949.83
21 - Sifto Canada Inc.	PW 0100	152	FH	100	100	100	86.00	1,097.50	31,750.00	2,230.95
22 - The Canadian Salt Company	PW 0100	159	FH	100	100	100	14.50	198.50	8,020.50	545.63
22 - The Canadian Salt Company	IW 0600	122	FH	100	100	91	3.00	5.50	22.50	5.97

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Chlorides - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - ***Priority 1***							
21 - Sifto Canada Inc.	MW 0200	4	75	.50	8.50	42.00	14.88
21 - Sifto Canada Inc.	PW 0100	4	50	.50	.75	4.00	1.50
22 - The Canadian Salt Company	PW 0100	3	0	.50	.50	.50	.50
22 - The Canadian Salt Company	MW 0300	1	0	.50	.50	.50	.50
22 - The Canadian Salt Company	DC 0500	2	0	.50	.50	.50	.50

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Chlorides - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Cement Category - ***Priority 1***						
06 - St. Marys, St Marys	CP 0100	4	.00	3.00	10.50	4.13
01 - St. Lawrence Cement	CP 0100	3	.00	.50	1.00	.50
04 - Essroc Canada Inc.	CP 0300	4	.00	.35	1.00	.43
03 - LaFarge, Woodstock	CP 0100	4	.00	.25	.50	.25
05 - St. Marys, Bowmanville	CP 0100	3	.00	.00	.50	.17
02 - LaFarge, Bath	CP 0200	4	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Chlorides - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
11 - Steetley Quarry Products	LP 0100	1	.40	.40	.40	.40
Salt Category - ***Priority 1***						
22 - The Canadian Salt Company	DC 0500	63	.00	.00	369.50	64.71

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Aluminum - Monitoring Samples: RMDL = 30 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Cement Category - *Priority 1*										
02 - LaFarge, Bath	QW 0300	2	FH	100	100	100	14.33	60.50	106.67	60.50
05 - St. Marys, Bowmanville	QW 0200	2	FH	100	100	100	43.33	48.33	53.33	48.33
06 - St. Marys, St Marys	CP 0100	2	FH	100	100	100	9.67	12.83	16.00	12.83
05 - St. Marys, Bowmanville	CP 0100	2	FH	100	100	100	5.67	9.67	13.67	9.67
04 - Essroc Canada Inc.	CP 0300	2	FH	100	100	100	6.33	6.33	6.33	6.33
03 - LaFarge, Woodstock	QW 0200	2	FM	100	100	50	3.67	25.17	46.67	25.17
04 - Essroc Canada Inc.	QW 0400	2	FM	100	100	50	4.00	4.83	5.67	4.83
03 - LaFarge, Woodstock	CP 0100	2	FM	100	100	50	2.00	4.67	7.33	4.67
01 - St. Lawrence Cement	CP 0100	2	FM	100	100	0	2.90	3.28	3.67	3.28
02 - LaFarge, Bath	CP 0200	2	FL	100	50	50	1.20	13.10	25.00	13.10
Chemical Lime/Magnesium Category - *Priority 1*										
10 - Reiss Lime Company Ltd.	LP 0100	2	FH	100	100	100	25.67	27.17	28.67	27.17
08 - Beachvilime Ltd., East	LP 0100	2	FH	100	100	100	5.00	5.17	5.33	5.17
07 - Stelco Inc.	LP 0100	2	FM	100	100	50	4.33	8.00	11.67	8.00
09 - Guelph Dolime	LP 0200	2	FM	100	100	0	2.47	3.23	4.00	3.23
12 - Beachvilime Ltd., West	LP 0100	2	FL	100	50	50	1.33	3.33	5.33	3.33
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
17 - Domtar Inc.	GYP 0200	2	FH	100	100	100	8.00	22.33	36.67	22.33
17 - Domtar Inc.	MW 0300	2	FH	100	100	100	14.67	18.67	22.67	18.67
16 - CGC Inc.	MW 0100	2	FM	100	100	50	2.93	28.13	53.33	28.13
20 - Luzenac Inc.	PW 0200	2	FM	100	100	50	2.67	25.50	48.33	25.50
16 - CGC Inc.	GYP 0200	2	FM	100	100	50	3.33	4.50	5.67	4.50
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 3*										
20 - Luzenac Inc.	MW 0100	2	FL	50	0	0	1.00	1.17	1.33	1.17
Salt Category - *Priority 1*										
22 - The Canadian Salt Company	PW 0100	4	FH	100	100	75	4.67	16.50	60.00	24.42
22 - The Canadian Salt Company	DC 0500	2	FM	100	100	50	3.33	9.17	15.00	9.17
21 - Sifto Canada Inc.	MW 0200	2	FM	100	100	0	2.33	3.17	4.00	3.17
Salt Category - *Priority 2*										
21 - Sifto Canada Inc.	PW 0100	4	IL	25	0	0	.33	.33	1.00	.50
Salt Category - *Priority 3*										
22 - The Canadian Salt Company	MW 0300	2	FL	50	50	50	.30	14.82	29.33	14.82
Clay and Shale Category - *Priority 1*										
24 - Canada Brick, Burlington	SW 0100	2	FH	100	100	100	33.33	383.33	733.33	383.33
25 - Canada Brick, Cooksville	SW 0200	2	FH	100	100	100	13.00	173.17	333.33	173.17
27 - Canada Brick, Streetsville	SW 0100	2	FH	100	100	100	25.00	49.17	73.33	49.17
26 - Canada Brick, Gloucester	SW 0100	2	FH	100	100	100	36.67	46.67	56.67	46.67
25 - Canada Brick, Cooksville	SW 0100	2	FH	100	100	100	6.33	38.17	70.00	38.17

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Aluminum - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - *Priority 1*							
22 - The Canadian Salt Company	DC 0500	2	0	.33	.50	.67	.50
21 - Sifto Canada Inc.	MW 0200	2	0	.33	.33	.33	.33
22 - The Canadian Salt Company	PW 0100	4	0	.30	.30	.30	.30
Salt Category - *Priority 2*							
21 - Sifto Canada Inc.	PW 0100	4	0	.33	.33	.33	.33
Salt Category - *Priority 3*							
22 - The Canadian Salt Company	MW 0300	2	0	.30	.30	.30	.30

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Aluminum - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 3*						
20 - Luzenac Inc.	MW 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Ammonia plus Ammonium - Monitoring Samples: RMDL = .25 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Cement Category - *Priority 1*										
05 - St. Marys, Bowmanville	QW 0200	12	FH	100	100	75	2.96	18.80	33.20	16.75
04 - Essroc Canada Inc.	QW 0400	12	FM	75	58	8	.72	2.32	6.80	2.34
02 - LaFarge, Bath	QW 0300	12	FL	67	17	17	.20	1.18	7.20	1.93
03 - LaFarge, Woodstock	QW 0200	11	FL	64	9	9	.40	1.24	6.00	1.50
06 - St. Marys, St Marys	QW 0200	12	FL	42	8	0	.10	.52	3.20	.93
Cement Category - *Priority 2*										
03 - LaFarge, Woodstock	CP 0100	2	NO	0	0	0	.52	.56	.60	.56
05 - St. Marys, Bowmanville	CP 0100	2	NO	0	0	0	.17	.31	.44	.31
04 - Essroc Canada Inc.	CP 0300	2	NO	0	0	0	.22	.27	.32	.27
02 - LaFarge, Bath	CP 0200	2	NO	0	0	0	.24	.25	.26	.25
Cement Category - *Priority 3*										
06 - St. Marys, St Marys	CP 0100	2	FL	50	0	0	.72	1.26	1.80	1.26
Chemical Lime/Magnesium Category - *Priority 1*										
13 - Timminco Ltd.	SW 0200	12	FM	100	75	50	1.56	5.84	12.40	6.26
07 - Stelco Inc.	LP 0100	12	FL	92	0	0	.88	1.28	1.92	1.31
09 - Guelph Dolime	LP 0200	13	FL	85	15	0	.68	1.48	2.80	1.47
09 - Guelph Dolime	LP 0100	13	FL	85	0	0	.68	1.20	1.48	1.16
13 - Timminco Ltd.	MP 0100	13	FH	77	77	77	.80	48.00	110.04	43.39
08 - Beachvilime Ltd., East	LP 0100	12	FL	75	0	0	.76	1.38	1.76	1.33
12 - Beachvilime Ltd., West	LP 0100	11	FL	55	18	0	.40	1.04	2.72	1.13
11 - Steetley Quarry Products	LP 0100	16	IM	31	19	6	.12	.74	23.56	2.39
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
15 - Westroc Industries Ltd.	MW 0100	12	FH	100	100	92	3.04	15.72	30.84	16.02
16 - CGC Inc.	GYP 0200	2	FL	100	50	0	1.56	2.44	3.32	2.44
17 - Domtar Inc.	MW 0100	12	FH	83	83	58	.48	9.60	48.00	14.46
16 - CGC Inc.	MW 0100	12	FL	58	17	0	.44	1.26	2.28	1.30
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 2*										
17 - Domtar Inc.	MW 0300	12	NO	8	0	0	.10	.15	1.00	.27
Salt Category - *Priority 1*										
22 - The Canadian Salt Company	MW 0300	11	FH	100	100	100	9.20	22.40	52.00	25.64
22 - The Canadian Salt Company	DC 0500	6	FH	100	100	67	2.92	6.40	8.80	5.95
21 - Sifto Canada Inc.	MW 0200	12	FH	100	83	75	1.36	9.40	19.44	9.49
21 - Sifto Canada Inc.	PW 0100	12	FL	50	0	0	.24	.98	1.24	.86
Salt Category - *Priority 2*										
22 - The Canadian Salt Company	PW 0100	12	NO	8	0	0	.10	.48	1.36	.57

Ammonia plus Ammonium - Monitoring Samples:

RMDL = .25 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Quarries Category - ***Priority 1***										
28 - 3M Canada Inc.	QW 0100	5	FL	80	40	40	.68	1.32	7.60	3.70
42 - Nelson Quarry	QW 0100	12	FL	75	50	17	.31	1.84	6.92	2.58
31 - Carden Quarry	QW 0100	10	FL	70	40	10	.24	1.42	6.08	1.99
38 - R.E. Law Quarry	QW 0100	12	FL	42	0	0	.10	.78	1.76	.88
37 - N & S Francon Quarries	QW 0100	12	IH	33	8	8	.88	.88	100.00	9.17
Quarries Category - ***Priority 2***										
42 - Nelson Quarry	WW 0200	1	NO	0	0	0	.16	.16	.16	.16

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Ammonia plus Ammonium - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - ***Priority 1***							
21 - Sifto Canada Inc.	PW 0100	4	0	.12	.12	.12	.12
21 - Sifto Canada Inc.	MW 0200	4	0	.10	.12	.12	.12
22 - The Canadian Salt Company	MW 0300	2	0	.10	.10	.10	.10
22 - The Canadian Salt Company	DC 0500	2	0	.10	.10	.10	.10
Salt Category - ***Priority 2***							
22 - The Canadian Salt Company	PW 0100	4	0	.10	.10	.12	.11
Quarries Category - ***Priority 1***							
37 - N & S Francon Quarries	QW 0100	1	0	.88	.88	.88	.88

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Ammonia plus Ammonium - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
09 - Guelph Dolime	LP 0100	3	.04	.08	.28	.13
07 - Stelco Inc.	LP 0100	4	.00	.12	.24	.12
11 - Steetley Quarry Products	LP 0100	3	.01	.06	.19	.09
12 - Beachvilime Ltd., West	LP 0100	4	.00	.06	.16	.07
09 - Guelph Dolime	LP 0200	3	.04	.04	.04	.04
08 - Beachvilime Ltd., East	LP 0100	4	.00	.02	.12	.04
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
15 - Westroc Industries Ltd.	MW 0100	4	.12	.42	.72	.42
16 - CGC Inc.	MW 0100	4	.00	.04	.16	.06
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 2*						
17 - Domtar Inc.	MW 0300	4	.00	.08	.08	.06
Quarries Category - *Priority 1*						
38 - R.E. Law Quarry	QW 0100	5	.00	.03	823.19	164.65
37 - N & S Francon Quarries	QW 0100	1	4.00	4.00	4.00	4.00
28 - 3M Canada Inc.	QW 0100	1	.48	.48	.48	.48
42 - Nelson Quarry	QW 0100	5	.04	.12	.45	.15
31 - Carden Quarry	QW 0100	5	.01	.07	.29	.11
Quarries Category - *Priority 2*						
42 - Nelson Quarry	WW 0200	1	.01	.01	.01	.01

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Ammonia plus Ammonium - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
13 - Timminco Ltd.	MP 0100	3	.00	.40	2.40	.93
11 - Steetley Quarry Products	LP 0100	10	.00	.08	2.28	.28
Quarries Category - *Priority 1*						
37 - N & S Francon Quarries	QW 0100	4	.00	.02	.12	.04

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Ammonia plus Ammonium - Lab Corrections of Monitoring Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
11 Steetley Quarry Products	LP 0100	2	.20	1.24	2.28	1.24
Quarries Category - ***Priority 1***						
28 3M Canada Inc.	QW 0100	1	1.22	1.22	1.22	1.22

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Monitoring Sample Concentration and the Corrected Monitoring Sample Concentration Divided by the Regulation Method Detection Limit.

Phenolics (4AAP) - Monitoring Samples:

RMDL = 2 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Cement Category - *Priority 1*										
05 - St. Marys, Bowmanville	QW 0200	11	FH	91	91	55	.10	6.00	60.00	19.55
04 - Essroc Canada Inc.	CP 0300	12	FL	83	17	0	.50	1.00	2.50	1.25
04 - Essroc Canada Inc.	QW 0400	12	FM	75	67	8	.10	2.25	11.00	2.73
03 - LaFarge, Woodstock	CP 0100	12	FL	75	50	0	.10	1.75	2.50	1.55
03 - LaFarge, Woodstock	QW 0200	10	FL	60	30	0	.10	1.50	2.50	1.26
06 - St. Marys, St Marys	QW 0200	12	FL	58	42	0	.50	1.50	3.00	1.50
02 - LaFarge, Bath	QW 0300	12	FL	58	8	0	.10	1.00	4.00	1.09
06 - St. Marys, St Marys	SW 0500	11	FL	55	27	9	.15	1.00	10.00	1.97
05 - St. Marys, Bowmanville	CP 0100	12	FL	50	42	0	.15	1.00	4.00	1.51
06 - St. Marys, St Marys	CP 0100	12	FL	50	25	0	.10	.75	4.00	1.26
01 - St. Lawrence Cement	CP 0100	12	FL	42	0	0	.50	.50	1.50	.79
Cement Category - *Priority 2*										
02 - LaFarge, Bath	CP 0200	12	IL	17	0	0	.50	.50	1.50	.63
Chemical Lime/Magnesium Category - *Priority 1*										
08 - Beachvilime Ltd., East	LP 0100	2	FL	100	50	50	1.50	6.50	11.50	6.50
10 - Reiss Lime Company Ltd.	LP 0100	12	FH	58	58	58	.10	86.25	440.00	169.51
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
17 - Domtar Inc.	MW 0400	2	FM	100	100	50	2.50	12.00	21.50	12.00
15 - Westroc Industries Ltd.	MW 0100	12	FH	100	92	83	1.50	14.50	39.00	17.88
14 - Cal Graphite Corp.	GP 0100	13	FM	92	62	15	1.00	2.50	87.05	9.46
17 - Domtar Inc.	MW 0100	12	FL	50	8	0	.50	.75	2.00	.83
18 - Unimin Canada Ltd.	PW 0100	12	FL	42	33	17	1.00	1.00	7.50	2.44
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 2*										
17 - Domtar Inc.	MW 0300	12	IL	17	0	0	.50	.50	1.50	.63
Salt Category - *Priority 1*										
22 - The Canadian Salt Company	DC 0500	6	FL	100	50	17	1.50	2.50	5.50	2.92
22 - The Canadian Salt Company	MW 0300	11	FH	91	91	73	.15	7.50	50.00	11.38
21 - Sifto Canada Inc.	MW 0200	12	FH	83	75	58	1.00	6.50	26.00	7.92
22 - The Canadian Salt Company	PW 0100	12	FL	67	33	25	.15	1.50	55.00	7.93
Salt Category - *Priority 2*										
21 - Sifto Canada Inc.	PW 0100	12	IM	25	25	8	.50	1.00	9.00	1.88
Quarries Category - *Priority 1*										
38 - R.E. Law Quarry	QW 0100	12	IH	33	8	8	.30	.50	25.00	2.70
Sand and Gravel Category - *Priority 1*										
47 - Kam Aggregates Ltd.	WW 0100	6	FM	100	83	17	1.00	3.75	5.00	3.50

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Phenolics (4AAP) - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***							
14 - Cal Graphite Corp.	GP 0100	2	0	1.00	1.00	1.00	1.00
Salt Category - ***Priority 1***							
21 - Sifto Canada Inc.	MW 0200	4	25	1.00	1.00	3.50	1.63
22 - The Canadian Salt Company	DC 0500	2	0	.50	.50	.50	.50
22 - The Canadian Salt Company	PW 0100	4	0	.15	.50	.50	.41
22 - The Canadian Salt Company	MW 0300	2	0	.15	.33	.50	.33
Salt Category - ***Priority 2***							
21 - Sifto Canada Inc.	PW 0100	4	0	1.00	1.00	1.00	1.00

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Phenolics (4AAP) - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Cement Category - ***Priority 1***						
05 - St. Marys, Bowmanville	CP 0100	3	.00	.50	1.00	.50
03 - LaFarge, Woodstock	CP 0100	4	.00	.25	.50	.25
04 - Essroc Canada Inc.	CP 0300	4	.00	.25	.50	.25
01 - St. Lawrence Cement	CP 0100	3	.00	.00	.50	.17
06 - St. Marys, St Marys	CP 0100	4	.00	.00	.50	.13
Cement Category - ***Priority 2***						
02 - LaFarge, Bath	CP 0200	4	.00	.00	.00	.00
Chemical Lime/Magnesium Category - ***Priority 1***						
10 - Reiss Lime Company Ltd.	LP 0100	4	.00	2.50	20.00	6.25
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***						
15 - Westroc Industries Ltd.	MW 0100	4	.00	2.00	8.00	3.00
14 - Cal Graphite Corp.	GP 0100	1	.70	.70	.70	.70
18 - Unimin Canada Ltd.	PW 0100	4	.00	.00	.50	.13
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 2***						
17 - Domtar Inc.	MW 0300	4	.00	.00	.50	.13
Quarries Category - ***Priority 1***						
38 - R.E. Law Quarry	QW 0100	5	.00	.00	.10	.02

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Zinc - Monitoring Samples: RMDL = 10 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Cement Category - ***Priority 1***										
06 - St. Marys, St Marys	CP 0100	2	FM	100	100	0	2.90	3.65	4.40	3.65
06 - St. Marys, St Marys	QW 0200	2	FM	100	100	0	2.10	2.40	2.70	2.40
03 - LaFarge, Woodstock	CP 0100	2	FL	100	0	0	1.10	1.15	1.20	1.15
Chemical Lime/Magnesium Category - ***Priority 1***										
09 - Guelph Dolime	LP 0100	2	FH	100	100	100	6.60	6.85	7.10	6.85
09 - Guelph Dolime	LP 0200	2	FH	100	100	100	5.40	6.45	7.50	6.45
13 - Timminco Ltd.	MP 0100	2	FL	100	50	0	1.00	1.50	2.00	1.50
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***										
20 - Luzenac Inc.	PW 0200	2	FM	100	100	0	3.00	3.50	4.00	3.50
20 - Luzenac Inc.	MW 0100	2	FM	100	100	0	2.00	3.00	4.00	3.00
15 - Westroc Industries Ltd.	MW 0100	2	FL	100	50	0	1.00	1.50	2.00	1.50
16 - CGC Inc.	MW 0100	2	FL	100	0	0	1.00	1.20	1.40	1.20
14 - Cal Graphite Corp.	GP 0100	13	FM	92	92	46	1.00	3.90	22.40	5.92
Salt Category - ***Priority 1***										
21 - Sifto Canada Inc.	MW 0200	2	FH	100	100	100	18.00	21.50	25.00	21.50
22 - The Canadian Salt Company	DC 0500	2	FM	100	100	50	4.70	7.35	10.00	7.35
22 - The Canadian Salt Company	MW 0300	2	FL	100	50	50	1.60	18.30	35.00	18.30
21 - Sifto Canada Inc.	PW 0100	4	FM	75	75	25	1.00	2.50	7.00	3.25
Salt Category - ***Priority 2***										
22 - The Canadian Salt Company	PW 0100	4	IL	25	0	0	.20	.70	1.70	.83
Clay and Shale Category - ***Priority 1***										
25 - Canada Brick, Cooksville	SW 0100	2	FH	100	100	100	17.00	17.50	18.00	17.50
27 - Canada Brick, Streetsville	SW 0100	2	FM	100	100	50	3.50	6.50	9.50	6.50
24 - Canada Brick, Burlington	SW 0100	2	FL	100	50	50	1.70	10.35	19.00	10.35

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Zinc - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***							
14 - Cal Graphite Corp.	GP 0100	2	0	.50	.75	1.00	.75
Salt Category - ***Priority 1***							
21 - Sifto Canada Inc.	PW 0100	4	25	1.00	1.00	5.00	2.00
21 - Sifto Canada Inc.	MW 0200	2	50	1.00	1.00	1.00	1.00
22 - The Canadian Salt Company	MW 0300	2	0	.40	.40	.40	.40
22 - The Canadian Salt Company	DC 0500	2	0	.20	.30	.40	.30
Salt Category - ***Priority 2***							
22 - The Canadian Salt Company	PW 0100	4	25	.40	.40	1,900.00	475.30

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Zinc - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***						
14 - Cal Graphite Corp.	GP 0100	1	.20	.20	.20	.20

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Zinc - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
13 - Timminco Ltd.	MP 0100	2	.00	.00	.00	.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***						
20 - Luzenac Inc.	MW 0100	2	.00	1.00	2.00	1.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Sulphide - Monitoring Samples: RMDL = .02 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Cement Category - Priority 1										
05 - St. Marys, Bowmanville	QW 0200	2	FM	100	100	0	3.00	3.75	4.50	3.75
03 - LaFarge, Woodstock	CP 0100	2	FM	100	100	0	2.00	2.50	3.00	2.50
06 - St. Marys, St Marys	QW 0200	2	FL	100	50	0	1.50	2.25	3.00	2.25
03 - LaFarge, Woodstock	QW 0200	2	FL	100	50	0	1.00	2.00	3.00	2.00
06 - St. Marys, St Marys	CP 0100	2	FL	100	0	0	1.00	1.25	1.50	1.25
Cement Category - Priority 3										
05 - St. Marys, Bowmanville	CP 0100	2	FL	50	50	0	.95	1.73	2.50	1.73
Chemical Lime/Magnesium Category - Priority 1										
10 - Reiss Lime Company Ltd.	LP 0100	2	FH	100	100	100	5.60	252.80	500.00	252.80
Graphite/Gypsum/Nepheline Syenite/Talc Category - Priority 1										
15 - Westroc Industries Ltd.	MW 0100	2	FH	100	100	100	157.50	418.75	680.00	418.75
17 - Domtar Inc.	MW 0100	2	FM	100	100	50	2.50	3.75	5.00	3.75
17 - Domtar Inc.	GYP 0200	2	FL	100	50	50	1.50	6.75	12.00	6.75
17 - Domtar Inc.	MW 0300	2	FL	100	50	50	1.50	2.75	4.00	2.75
Clay and Shale Category - Priority 1										
24 - Canada Brick, Burlington	SW 0100	2	FM	100	100	0	4.00	4.00	4.00	4.00
27 - Canada Brick, Streetsville	SW 0100	2	FL	100	50	0	1.00	2.00	3.00	2.00
25 - Canada Brick, Cooksville	SW 0200	2	FL	100	0	0	1.00	1.25	1.50	1.25
25 - Canada Brick, Cooksville	SW 0100	2	FL	100	0	0	1.00	1.00	1.00	1.00

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Dissolved Solids - Monitoring Samples: RMDL = 20 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - *Priority 1*										
22 - The Canadian Salt Company	MW 0300	11	FH	100	100	100	2,816.55	8,143.85	14,158.20	8,079.47
22 - The Canadian Salt Company	DC 0500	6	FH	100	100	100	1,284.10	3,232.43	4,477.05	3,165.42
21 - Sifto Canada Inc.	MW 0200	12	FH	100	100	100	515.00	2,107.50	4,585.00	2,313.59
21 - Sifto Canada Inc.	PW 0100	12	FH	100	100	100	130.50	205.50	1,270.00	336.50
22 - The Canadian Salt Company	PW 0100	26	FH	100	100	100	10.95	60.90	463.55	108.50
22 - The Canadian Salt Company	IW 0600	16	FH	100	100	100	6.80	8.95	11.35	8.81

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Dissolved Solids - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - ***Priority 1***							
22 - The Canadian Salt Company	MW 0300	1	100	2.95	2.95	2.95	2.95
22 - The Canadian Salt Company	PW 0100	1	0	.50	.50	.50	.50
21 - Sifto Canada Inc.	MW 0200	4	0	.25	.25	.50	.31
21 - Sifto Canada Inc.	PW 0100	4	0	.25	.25	.25	.25

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Dissolved Solids - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Salt Category - ***Priority 1***						
22 - The Canadian Salt Company	MW 0300	4	6.30	28.80	229.45	73.34
22 - The Canadian Salt Company	PW 0100	5	.20	.35	1.35	.54

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Total phosphorus - Monitoring Samples:

RMDL = .1 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Cement Category - *Priority 1*										
02 - LaFarge, Bath	QW 0300	2	FL	100	0	0	1.40	1.55	1.70	1.55
Cement Category - *Priority 3*										
02 - LaFarge, Bath	CP 0200	2	FL	50	50	0	.69	1.40	2.10	1.40
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
20 - Luzenac Inc.	MW 0100	2	FH	100	100	100	13.00	15.60	18.20	15.60
17 - Domtar Inc.	GYP 0200	2	FL	100	0	0	1.10	1.20	1.30	1.20
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 3*										
17 - Domtar Inc.	MW 0300	2	FL	50	0	0	.69	1.04	1.40	1.04
Salt Category - *Priority 1*										
22 - The Canadian Salt Company	MW 0300	11	FL	82	36	27	.69	1.80	18.00	3.79
21 - Sifto Canada Inc.	MW 0200	12	FL	75	50	25	.10	2.10	28.80	6.33
22 - The Canadian Salt Company	DC 0500	6	FL	50	17	17	.69	.95	5.10	1.65
Salt Category - *Priority 2*										
21 - Sifto Canada Inc.	PW 0100	12	IL	17	0	0	.10	.15	1.50	.42
22 - The Canadian Salt Company	PW 0100	12	NO	8	0	0	.69	.69	1.30	.74

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Total phosphorus - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - *Priority 1*							
22 - The Canadian Salt Company	DC 0500	2	50	.69	.90	1.10	.90
22 - The Canadian Salt Company	MW 0300	2	0	.69	.69	.69	.69
21 - Sifto Canada Inc.	MW 0200	4	0	.10	.20	.20	.17
Salt Category - *Priority 2*							
22 - The Canadian Salt Company	PW 0100	4	0	.69	.69	.69	.69
21 - Sifto Canada Inc.	PW 0100	4	0	.10	.15	.20	.15

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Total phosphorus - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***						
20 - Luzenac Inc.	MW 0100	2	1.00	1.40	1.80	1.40

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Fluoride - Monitoring Samples: RMDL = .1 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Clay and Shale Category - ***Priority 1***										
27 - Canada Brick, Streetsville	SW 0100	12	FH	100	100	100	18.00	20.00	23.00	20.33
23 - Brampton Brick Ltd.	SW 0100	3	FH	100	100	100	15.00	18.00	21.00	18.00
24 - Canada Brick, Burlington	SW 0100	10	FH	100	100	100	12.00	16.00	20.00	16.50
25 - Canada Brick, Cooksville	SW 0100	9	FH	100	100	100	10.00	13.00	19.00	13.44
25 - Canada Brick, Cooksville	SW 0200	9	FH	100	100	100	5.00	8.00	13.00	9.00
26 - Canada Brick, Gloucester	SW 0100	5	FM	100	100	40	3.00	4.00	6.00	4.40

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Fluoride - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Clay and Shale Category - ***Priority 1***						
27 - Canada Brick, Streetsville	SW 0100	4	.00	.00	2.00	.50
26 - Canada Brick, Gloucester	SW 0100	4	.00	.50	1.00	.50
25 - Canada Brick, Cooksville	SW 0100	5	.00	.00	1.00	.40
23 - Brampton Brick Ltd.	SW 0100	1	.30	.30	.30	.30
24 - Canada Brick, Burlington	SW 0100	4	.00	.00	1.00	.25
25 - Canada Brick, Cooksville	SW 0200	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Cyanide Total - Monitoring Samples:

RMDL = .005 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*										
10 - Reiss Lime Company Ltd.	LP 0100	2	FM	100	100	50	2.00	4.00	6.00	4.00
08 - Beachvilime Ltd., East	LP 0100	2	FM	100	100	0	2.80	3.00	3.20	3.00
13 - Timminco Ltd.	SW 0200	12	FL	58	50	17	.90	2.30	5.20	2.58
Chemical Lime/Magnesium Category - *Priority 3*										
13 - Timminco Ltd.	MP 0100	2	FL	50	50	0	.90	1.75	2.60	1.75
Salt Category - *Priority 1*										
22 - The Canadian Salt Company	MW 0300	2	FH	100	100	100	28.00	38.00	48.00	38.00
22 - The Canadian Salt Company	DC 0500	6	FH	100	83	67	1.00	111.00	300.00	124.37
Salt Category - *Priority 2*										
22 - The Canadian Salt Company	PW 0100	12	NO	8	8	0	.10	.40	3.80	.65

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Cyanide Total - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - *Priority 1*							
22 - The Canadian Salt Company	DC 0500	2	0	.20	.20	.20	.20
22 - The Canadian Salt Company	MW 0300	2	0	.10	.15	.20	.15
Salt Category - *Priority 2*							
22 - The Canadian Salt Company	PW 0100	4	0	.10	.20	.20	.17

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Cyanide Total - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 3*						
13 - Timminco Ltd.	MP 0100	2	.00	.10	.20	.10

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Pentachlorophenol - Monitoring Samples:

RMDL = 1.3 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***										
13 - Timminco Ltd.	MP 0100	2	FL	100	50	0	1.54	2.00	2.46	2.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***										
20 - Luzenac Inc.	MW 0100	2	FL	100	0	0	1.54	1.54	1.54	1.54
20 - Luzenac Inc.	PW 0200	2	FL	100	0	0	1.54	1.54	1.54	1.54
19 - Canada Talc Ltd.	MW 0100	2	FL	100	0	0	1.54	1.54	1.54	1.54
Salt Category - ***Priority 1***										
21 - Sifto Canada Inc.	MW 0200	2	FL	100	50	0	1.85	3.12	4.38	3.12
Salt Category - ***Priority 2***										
21 - Sifto Canada Inc.	PW 0100	4	NO	0	0	0	.92	.92	.92	.92

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Pentachlorophenol - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***							
13 - Timminco Ltd.	MP 0100	2	100	1.54	1.54	1.54	1.54
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***							
20 - Luzenac Inc.	MW 0100	2	100	1.54	1.54	1.54	1.54
19 - Canada Talc Ltd.	MW 0100	2	100	1.54	1.54	1.54	1.54
Salt Category - ***Priority 1***							
21 - Sifto Canada Inc.	MW 0200	2	0	.92	.92	.92	.92
Salt Category - ***Priority 2***							
21 - Sifto Canada Inc.	PW 0100	4	0	.92	.92	.92	.92

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Pentachlorophenol - Lab Corrections of Travelling Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
13 - Timminco Ltd.	MP 0100	1	.00	.00	.00	.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***						
20 - Luzenac Inc.	MW 0100	1	.00	.00	.00	.00
19 - Canada Talc Ltd.	MW 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Blank Concentration and the Corrected Travelling Blank Concentration Divided by the Regulation Method Detection Limit.

Pentachlorophenol - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
Chemical Lime/Magnesium Category - ***Priority 1***								
20	13 - Timminco Ltd.	MP 0100	1	130.0	130.0	130.0	130.0	7.7
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***								
20	19 - Canada Talc Ltd.	MW 0100	1	100.0	100.0	100.0	100.0	15.4
	20 - Luzenac Inc.	MW 0100	2	20.0	59.5	99.0	59.5	7.7
Salt Category - ***Priority 1***								
20	21 - Sifto Canada Inc.	MW 0200	2	95.0	97.5	100.0	97.5	3.1
Salt Category - ***Priority 2***								
20	21 - Sifto Canada Inc.	PW 0100	4	10.0	302.5	700.0	328.8	3.1

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

Pentachlorophenol - Lab Corrections of Travelling Spiked Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
13 - Timminco Ltd.	MP 0100	1	.00	.00	.00	.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 - Luzenac Inc.	MW 0100	1	.00	.00	.00	.00
19 - Canada Talc Ltd.	MW 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Spiked Blank Concentration and the Corrected Travelling Spiked Blank Concentration Divided by the Regulation Method Detection Limit.

Pentachlorophenol - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
13 - Timminco Ltd.	MP 0100	2	.00	.04	.08	.04
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 - Luzenac Inc.	MW 0100	2	.00	.00	.00	.00
19 - Canada Talc Ltd.	MW 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Pentachlorophenol - Lab Corrections of Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
13 - Timminco Ltd.	MP 0100	1	.00	.00	.00	.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 - Luzenac Inc.	MW 0100	1	.00	.00	.00	.00
19 - Canada Talc Ltd.	MW 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Split Sample Concentration and the Corrected Split Sample Concentration Divided by the Regulation Method Detection Limit for Selected Parameters

Pentachlorophenol - Lab Corrections of Monitoring Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
13 Timminco Ltd.	MP 0100	1	.00	.00	.00	.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 Luzenac Inc.	MW 0100	1	.00	.00	.00	.00
19 Canada Talc Ltd.	MW 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Monitoring Sample Concentration and the Corrected Monitoring Sample Concentration Divided by the Regulation Method Detection Limit.

Total Kjeldahl Nitrogen - Monitoring Samples: RMDL = .5 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - *Priority 1*										
21 - Sifto Canada Inc.	MW 0200	12	FH	100	100	67	2.10	7.48	13.94	7.35
22 - The Canadian Salt Company	MW 0300	11	FM	82	64	45	.32	4.00	24.00	6.60
22 - The Canadian Salt Company	DC 0500	6	FL	67	33	0	.32	1.40	3.60	1.60
22 - The Canadian Salt Company	PW 0100	12	FL	58	0	0	.60	1.10	1.58	1.09
21 - Sifto Canada Inc.	PW 0100	12	IL	33	0	0	.28	.69	1.20	.73

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Total Kjeldahl Nitrogen - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - *Priority 1*							
22 - The Canadian Salt Company	MW 0300	2	0	.32	.51	.70	.51
22 - The Canadian Salt Company	PW 0100	4	0	.32	.32	.66	.41
22 - The Canadian Salt Company	DC 0500	2	0	.32	.32	.32	.32
21 - Sifto Canada Inc.	MW 0200	4	0	.16	.16	.20	.17
21 - Sifto Canada Inc.	PW 0100	4	0	.16	.16	.16	.16

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

4-Nitrophenol - Monitoring Samples:

RMDL = 1.4 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***										
13 - Timminco Ltd.	MP 0100	2	FM	100	100	0	3.57	3.57	3.57	3.57
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***										
20 - Luzenac Inc.	MW 0100	2	FM	100	100	0	3.57	3.57	3.57	3.57
20 - Luzenac Inc.	PW 0200	2	FM	100	100	0	3.57	3.57	3.57	3.57
19 - Canada Talc Ltd.	MW 0100	2	FM	100	100	0	3.57	3.57	3.57	3.57

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

4-Nitrophenol - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***							
13 - Timminco Ltd.	MP 0100	2	100	3.57	3.57	3.57	3.57
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***							
20 - Luzenac Inc.	MW 0100	2	100	3.57	3.57	3.57	3.57
19 - Canada Talc Ltd.	MW 0100	2	100	3.57	3.57	3.57	3.57

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

4-Nitrophenol - Lab Corrections of Travelling Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
13 - Timminco Ltd.	MP 0100	1	.00	.00	.00	.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***						
20 - Luzenac Inc.	MW 0100	1	.00	.00	.00	.00
19 - Canada Talc Ltd.	MW 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Blank Concentration and the Corrected Travelling Blank Concentration Divided by the Regulation Method Detection Limit.

4-Nitrophenol - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
Chemical Lime/Magnesium Category - ***Priority 1***								
20	13 - Timminco Ltd.	MP 0100	1	82.0	82.0	82.0	82.0	7.1
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***								
20	20 - Luzenac Inc.	MW 0100	2	97.0	113.5	130.0	113.5	7.1
	19 - Canada Talc Ltd.	MW 0100	1	50.0	50.0	50.0	50.0	14.3

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

4-Nitrophenol - Lab Corrections of Travelling Spiked Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
13 - Timminco Ltd.	MP 0100	1	.00	.00	.00	.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***						
20 - Luzenac Inc.	MW 0100	1	.00	.00	.00	.00
19 - Canada Talc Ltd.	MW 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Spiked Blank Concentration and the Corrected Travelling Spiked Blank Concentration Divided by the Regulation Method Detection Limit.

4-Nitrophenol - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
13 - Timminco Ltd.	MP 0100	2	.00	.00	.00	.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***						
20 - Luzenac Inc.	MW 0100	2	.00	.00	.00	.00
19 - Canada Talc Ltd.	MW 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

4-Nitrophenol - Lab Corrections of Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
13 - Timminco Ltd.	MP 0100	1	.00	.00	.00	.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 - Luzenac Inc.	MW 0100	1	.00	.00	.00	.00
19 - Canada Talc Ltd.	MW 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Split Sample Concentration and the Corrected Split Sample Concentration Divided by the Regulation Method Detection Limit for Selected Parameters

4-Nitrophenol - Lab Corrections of Monitoring Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
13 Timminco Ltd.	MP 0100	1	.00	.00	.00	.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 Luzenac Inc.	MW 0100	1	.00	.00	.00	.00
19 Canada Talc Ltd.	MW 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Monitoring Sample Concentration and the Corrected Monitoring Sample Concentration Divided by the Regulation Method Detection Limit.

Toluene - Monitoring Samples:

RMDL = .5 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
20 - Luzenac Inc.	MW 0100	2	FL	100	0	0	1.10	1.10	1.10	1.10
20 - Luzenac Inc.	PW 0200	2	FL	100	0	0	1.10	1.10	1.10	1.10
19 - Canada Talc Ltd.	MW 0100	2	FL	100	0	0	1.10	1.10	1.10	1.10
Salt Category - *Priority 1*										
21 - Sifto Canada Inc.	MW 0200	2	FL	100	0	0	1.80	1.80	1.80	1.80
Salt Category - *Priority 2*										
21 - Sifto Canada Inc.	PW 0100	4	NO	0	0	0	.12	.36	.80	.41

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Toluene - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*							
20 - Luzenac Inc.	MW 0100	2	100	1.10	1.10	1.10	1.10
19 - Canada Talc Ltd.	MW 0100	2	100	1.10	1.10	1.10	1.10
Salt Category - *Priority 1*							
21 - Sifto Canada Inc.	MW 0200	2	0	.12	.12	.12	.12
Salt Category - *Priority 2*							
21 - Sifto Canada Inc.	PW 0100	4	25	.12	.12	6.00	1.59

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Toluene - Lab Corrections of Travelling Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 - Luzenac Inc.	MW 0100	2	.00	.00	.00	.00
19 - Canada Talc Ltd.	MW 0100	2	.00	.00	.00	.00
Salt Category - *Priority 1*						
21 - Sifto Canada Inc.	MW 0200	2	.00	.00	.00	.00
Salt Category - *Priority 2*						
21 - Sifto Canada Inc.	PW 0100	4	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Blank Concentration and the Corrected Travelling Blank Concentration Divided by the Regulation Method Detection Limit.

Toluene - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*								
17	19 - Canada Talc Ltd.	MW 0100	1	120.0	120.0	120.0	120.0	20.0
	20 - Luzenac Inc.	MW 0100	2	85.0	87.0	89.0	87.0	20.0
Salt Category - *Priority 1*								
17	21 - Sifto Canada Inc.	MW 0200	2	91.4	126.9	162.4	126.9	4.2
Salt Category - *Priority 2*								
17	21 - Sifto Canada Inc.	PW 0100	4	94.8	123.0	150.0	122.7	4.0

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

Toluene - Lab Corrections of Travelling Spiked Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 - Luzenac Inc.	MW 0100	2	.00	.00	.00	.00
19 - Canada Talc Ltd.	MW 0100	2	.00	.00	.00	.00
Salt Category - *Priority 1*						
21 - Sifto Canada Inc.	MW 0200	2	.20	.20	.20	.20
Salt Category - *Priority 2*						
21 - Sifto Canada Inc.	PW 0100	4	.06	.15	.21	.14

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Spiked Blank Concentration and the Corrected Travelling Spiked Blank Concentration Divided by the Regulation Method Detection Limit.

Toluene - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 - Luzenac Inc.	MW 0100	2	.00	.00	.00	.00
19 - Canada Talc Ltd.	MW 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Toluene - Lab Corrections of Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 - Luzenac Inc.	MW 0100	2	.00	.00	.00	.00
19 - Canada Talc Ltd.	MW 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Split Sample Concentration and the Corrected Split Sample Concentration Divided by the Regulation Method Detection Limit for Selected Parameters

Toluene - Lab Corrections of Monitoring Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 Luzenac Inc.	MW 0100	2	.00	.00	.00	.00
20 Luzenac Inc.	PW 0200	1	.00	.00	.00	.00
19 Canada Talc Ltd.	MW 0100	2	.00	.00	.00	.00
Salt Category - *Priority 1*						
21 Sifto Canada Inc.	MW 0200	2	.20	.20	.20	.20
Salt Category - *Priority 2*						
21 Sifto Canada Inc.	PW 0100	4	.00	.14	.48	.19

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Monitoring Sample Concentration and the Corrected Monitoring Sample Concentration Divided by the Regulation Method Detection Limit.

COD - Monitoring Samples: RMDL = 10 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - *Priority 1*										
22 - The Canadian Salt Company	MW 0300	2	FH	100	100	100	220.00	6,110.00	12,000.00	6,110.00
22 - The Canadian Salt Company	DC 0500	2	FH	100	100	100	170.00	1,185.00	2,200.00	1,185.00
21 - Sifto Canada Inc.	MW 0200	2	FH	100	100	100	284.00	286.00	288.00	286.00
21 - Sifto Canada Inc.	PW 0100	4	FL	75	25	25	1.00	1.55	10.00	3.53
Salt Category - *Priority 2*										
22 - The Canadian Salt Company	PW 0100	4	IH	25	25	25	.91	.91	7.00	2.43

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

COD - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - *Priority 1*							
21 - Sifto Canada Inc.	MW 0200	1	100	2.00	2.00	2.00	2.00
21 - Sifto Canada Inc.	PW 0100	1	0	1.00	1.00	1.00	1.00

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Arsenic - Monitoring Samples:

RMDL = 5 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
20 - Luzenac Inc.	MW 0100	12	FH	100	100	100	8.80	16.20	22.60	16.43
19 - Canada Talc Ltd.	MW 0100	14	FM	86	86	14	.46	3.50	6.00	3.59
20 - Luzenac Inc.	PW 0200	12	FL	75	42	0	.80	1.20	2.80	1.63
Salt Category - *Priority 1*										
22 - The Canadian Salt Company	MW 0300	2	FM	100	100	50	3.00	4.50	6.00	4.50
Salt Category - *Priority 2*										
22 - The Canadian Salt Company	PW 0100	4	NO	0	0	0	.60	.60	.80	.65
Salt Category - *Priority 3*										
22 - The Canadian Salt Company	DC 0500	2	FL	50	50	50	.60	3.30	6.00	3.30

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Arsenic - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - *Priority 1*							
22 - The Canadian Salt Company	MW 0300	2	0	.60	.60	.60	.60
Salt Category - *Priority 2*							
22 - The Canadian Salt Company	PW 0100	4	0	.60	.60	.60	.60
Salt Category - *Priority 3*							
22 - The Canadian Salt Company	DC 0500	2	0	.60	.60	.60	.60

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Arsenic - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 - Luzenac Inc.	PW 0200	1	13.80	13.80	13.80	13.80
20 - Luzenac Inc.	MW 0100	2	1.00	1.40	1.80	1.40

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Arsenic - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 - Luzenac Inc.	MW 0100	3	.00	1.00	3.00	1.33
19 - Canada Talc Ltd.	MW 0100	5	.00	.40	1.60	.52

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Nickel - Monitoring Samples: RMDL = 20 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*										
13 - Timminco Ltd.	MP 0100	2	FM	100	100	0	3.50	3.50	3.50	3.50
07 - Stelco Inc.	LP 0100	2	FM	100	100	0	2.45	2.95	3.45	2.95
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
19 - Canada Talc Ltd.	MW 0100	2	FL	100	50	0	1.50	2.25	3.00	2.25

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Nickel - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
13 - Timminco Ltd.	MP 0100	2	1.50	2.00	2.50	2.00
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
19 - Canada Talc Ltd.	MW 0100	2	1.50	2.00	2.50	2.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Cadmium - Monitoring Samples: RMDL = 2 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
19 - Canada Talc Ltd.	MW 0100	14	IM	36	29	7	.90	.90	5.00	1.58
20 - Luzenac Inc.	MW 0100	12	IH	33	25	17	.90	.90	10.00	2.10

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Cadmium - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 - Luzenac Inc.	MW 0100	2	.00	1.50	3.00	1.50

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Cadmium - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
19 - Canada Talc Ltd.	MW 0100	5	.00	.00	1.10	.22
20 - Luzenac Inc.	MW 0100	3	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Cobalt - Monitoring Samples: RMDL = 20 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*										
13 - Timminco Ltd.	MP 0100	2	FL	100	0	0	1.00	1.25	1.50	1.25
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
20 - Luzenac Inc.	MW 0100	2	FL	100	0	0	1.00	1.00	1.00	1.00

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Cobalt - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
13 - Timminco Ltd.	MP 0100	2	.50	1.25	2.00	1.25
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
20 - Luzenac Inc.	MW 0100	2	.00	.50	1.00	.50

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Copper - Monitoring Samples: RMDL = 10 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***										
10 - Reiss Lime Company Ltd.	LP 0100	12	IL	33	0	0	.60	.60	1.40	.79
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***										
14 - Cal Graphite Corp.	GP 0100	13	IL	31	8	0	.50	1.00	2.00	.93

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Copper - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***							
14 - Cal Graphite Corp.	GP 0100	2	0	.50	.75	1.00	.75

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Copper - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
10 - Reiss Lime Company Ltd.	LP 0100	4	.00	.05	.10	.05
Graphite/Gypsum/Nepheline Syenite/Talc Category - ***Priority 1***						
14 - Cal Graphite Corp.	GP 0100	1	.20	.20	.20	.20

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration

Divided by the Regulation Method Detection Limit.

Molybdenum - Monitoring Samples: RMDL = 20 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Clay and Shale Category - *Priority 1*										
26 - Canada Brick, Gloucester	SW 0100	2	FM	100	100	0	2.00	2.27	2.55	2.27
25 - Canada Brick, Cooksville	SW 0200	2	FL	100	50	0	1.10	2.13	3.15	2.13
Clay and Shale Category - *Priority 2*										
25 - Canada Brick, Cooksville	SW 0100	2	NO	0	0	0	.20	.23	.25	.23

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Vanadium - Monitoring Samples: RMDL = 30 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*										
10 - Reiss Lime Company Ltd.	LP 0100	2	FM	100	100	50	3.03	11.02	19.00	11.02
07 - Stelco Inc.	LP 0100	2	FM	100	100	50	4.20	8.37	12.53	8.37

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Di-n-butyl phthalate - Monitoring Samples:

RMDL = 3.8 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
15 - Westroc Industries Ltd.	MW 0100	2	FM	100	100	0	2.32	3.00	3.68	3.00
Salt Category - *Priority 1*										
21 - Sifto Canada Inc.	MW 0200	2	FL	100	50	50	1.05	20.00	38.95	20.00
Salt Category - *Priority 3*										
21 - Sifto Canada Inc.	PW 0100	4	FL	50	50	0	.76	1.96	3.16	1.96

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Di-n-butyl phthalate - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*							
15 - Westroc Industries Ltd.	MW 0100	2	0	.37	.57	.76	.57
Salt Category - *Priority 1*							
21 - Sifto Canada Inc.	MW 0200	2	0	.76	.76	.76	.76
Salt Category - *Priority 3*							
21 - Sifto Canada Inc.	PW 0100	4	0	.76	.76	.79	.77

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Di-n-butyl phthalate - Lab Corrections of Travelling Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
15 - Westroc Industries Ltd.	MW 0100	2	.00	.00	.00	.00
Salt Category - *Priority 1*						
21 - Sifto Canada Inc.	MW 0200	2	.00	.28	.55	.28
Salt Category - *Priority 3*						
21 - Sifto Canada Inc.	PW 0100	4	.00	.04	.50	.14

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Blank Concentration and the Corrected Travelling Blank Concentration Divided by the Regulation Method Detection Limit.

Di-n-butyl phthalate - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*								
19	15 - Westroc Industries Ltd.	MW 0100	2	87.4	110.6	133.8	110.6	2.5
Salt Category - *Priority 1*								
19	21 - Sifto Canada Inc.	MW 0200	1	72.5	72.5	72.5	72.5	1.1
Salt Category - *Priority 3*								
19	21 - Sifto Canada Inc.	PW 0100	3	94.6	137.5	144.1	125.4	2.3

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

Di-n-butyl phthalate - Lab Corrections of Travelling Spiked Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
15 - Westroc Industries Ltd.	MW 0100	2	.00	.00	.00	.00
Salt Category - *Priority 1*						
21 - Sifto Canada Inc.	MW 0200	1	.47	.47	.47	.47
Salt Category - *Priority 3*						
21 - Sifto Canada Inc.	PW 0100	3	.00	.00	.47	.16

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Spiked Blank Concentration and the Corrected Travelling Spiked Blank Concentration Divided by the Regulation Method Detection Limit.

Di-n-butyl phthalate - Lab Corrections of Monitoring Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
15 Westroc Industries Ltd.	MW 0100	2	.00	.00	.00	.00
Salt Category - *Priority 1*						
21 Sifto Canada Inc.	MW 0200	2	.53	1.84	3.16	1.84
Salt Category - *Priority 3*						
21 Sifto Canada Inc.	PW 0100	4	.00	.00	3.16	.79

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Monitoring Sample Concentration and the Corrected Monitoring Sample Concentration Divided by the Regulation Method Detection Limit.

Thiocyanates, Filtered - Monitoring Samples: RMDL = 5 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - *Priority 1*										
21 - Sifto Canada Inc.	MW 0200	2	FH	100	100	100	100.00	150.00	200.00	150.00
21 - Sifto Canada Inc.	PW 0100	4	FH	75	75	75	.10	15.00	100.00	32.52

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Thiocyanates, Filtered - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - *Priority 1*							
21 - Sifto Canada Inc.	PW 0100	4	50	.10	1.05	10.00	3.05
21 - Sifto Canada Inc.	MW 0200	2	50	.10	1.05	2.00	1.05

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Antimony - Monitoring Samples: RMDL = 5 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*										
19 - Canada Talc Ltd.	MW 0100	2	FL	100	0	0	1.20	1.20	1.20	1.20
Salt Category - *Priority 1*										
22 - The Canadian Salt Company	MW 0300	2	FL	100	50	0	1.00	1.50	2.00	1.50
Salt Category - *Priority 2*										
22 - The Canadian Salt Company	PW 0100	4	IL	25	0	0	.60	.77	1.60	.94
Salt Category - *Priority 3*										
22 - The Canadian Salt Company	DC 0500	2	FL	50	50	0	.60	1.30	2.00	1.30

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Antimony - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - *Priority 1*							
22 - The Canadian Salt Company	MW 0300	2	0	.60	.60	.60	.60
Salt Category - *Priority 2*							
22 - The Canadian Salt Company	PW 0100	4	0	.60	.60	.60	.60
Salt Category - *Priority 3*							
22 - The Canadian Salt Company	DC 0500	2	0	.60	.60	.60	.60

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Antimony - Split Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Graphite/Gypsum/Nepheline Syenite/Talc Category - *Priority 1*						
19 - Canada Talc Ltd.	MW 0100	2	.00	.20	.40	.20

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

TOC, Total Organic Carbon - Monitoring Samples:

RMDL = 5 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - ***Priority 1***										
21 - Sifto Canada Inc.	MW 0200	2	FL	100	50	50	1.50	38.69	75.88	38.69
22 - The Canadian Salt Company	DC 0500	2	FL	100	50	0	1.22	2.41	3.60	2.41
Salt Category - ***Priority 2***										
22 - The Canadian Salt Company	PW 0100	3	NO	0	0	0	.56	.76	.84	.72
Salt Category - ***Priority 2***										
22 - The Canadian Salt Company	MW 0300	1	FM	100	100	0	3.00	3.00	3.00	3.00
Salt Category - ***Priority 3***										
21 - Sifto Canada Inc.	PW 0100	4	FL	50	50	25	.20	1.28	15.34	4.52

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

TOC, Total Organic Carbon - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - ***Priority 1***							
21 - Sifto Canada Inc.	MW 0200	2	0	.10	.10	.10	.10
22 - The Canadian Salt Company	DC 0500	2	0	.10	.10	.10	.10
Salt Category - ***Priority 2***							
22 - The Canadian Salt Company	PW 0100	4	0	.10	.10	.10	.10
Salt Category - ***Priority 2***							
22 - The Canadian Salt Company	MW 0300	2	0	.10	.10	.10	.10
Salt Category - ***Priority 3***							
21 - Sifto Canada Inc.	PW 0100	4	0	.10	.10	.72	.25

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Cyanates, Filtered - Monitoring Samples:

RMDL = 5 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - *Priority 1*										
21 - Sifto Canada Inc.	MW 0200	2	FH	100	100	100	100.00	150.00	200.00	150.00
Salt Category - *Priority 3*										
21 - Sifto Canada Inc.	PW 0100	4	FL	50	50	50	.10	10.50	100.00	30.28

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Cyanates, Filtered - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - *Priority 1*							
21 - Sifto Canada Inc.	MW 0200	2	0	.10	.15	.20	.15
Salt Category - *Priority 3*							
21 - Sifto Canada Inc.	PW 0100	4	25	.10	.10	2.00	.57

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Phenanthrene - Monitoring Samples:

RMDL = .4 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*										
10 - Reiss Lime Company Ltd.	LP 0100	2	FL	100	50	50	1.25	3.63	6.00	3.63

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Phenanthrene - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*							
10 - Reiss Lime Company Ltd.	LP 0100	2	0	.50	.50	.50	.50

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Phenanthrene - Lab Corrections of Travelling Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
10 - Reiss Lime Company Ltd.	LP 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Blank Concentration and the Corrected Travelling Blank Concentration Divided by the Regulation Method Detection Limit.

Phenanthrene - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
Chemical Lime/Magnesium Category - ***Priority 1***								
19	10 - Reiss Lime Company Ltd.	LP 0100	2	100.0	114.0	128.0	114.0	12.5

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

Phenanthrene - Lab Corrections of Travelling Spiked Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
10 - Reiss Lime Company Ltd.	LP 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Spiked Blank Concentration and the Corrected Travelling Spiked Blank Concentration Divided by the Regulation Method Detection Limit.

Phenanthrene - Lab Corrections of Monitoring Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
10 Reiss Lime Company Ltd.	LP 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Monitoring Sample Concentration and the Corrected Monitoring Sample Concentration Divided by the Regulation Method Detection Limit.

p-Cresol - Monitoring Samples: RMDL = 3.5 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***										
10 - Reiss Lime Company Ltd.	LP 0100	12	FH	92	83	83	.63	29.00	46.57	26.96

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

p-Cresol - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***							
10 - Reiss Lime Company Ltd.	LP 0100	6	0	.13	.13	.13	.13

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

p-Cresol - Lab Corrections of Travelling Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
10 - Reiss Lime Company Ltd.	LP 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Blank Concentration and the Corrected Travelling Blank Concentration Divided by the Regulation Method Detection Limit.

p-Cresol - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
Chemical Lime/Magnesium Category - *Priority 1*								
20	10 - Reiss Lime Company Ltd.	LP 0100	6	32.9	66.3	88.1	64.8	9.7

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

p-Cresol - Lab Corrections of Travelling Spiked Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
10 - Reiss Lime Company Ltd.	LP 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Spiked Blank Concentration and the Corrected Travelling Spiked Blank Concentration Divided by the Regulation Method Detection Limit.

p-Cresol - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
10 - Reiss Lime Company Ltd.	LP 0100	4	.00	1.29	3.43	1.50

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

o-Cresol - Monitoring Samples: RMDL = 3.7 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***										
10 - Reiss Lime Company Ltd.	LP 0100	12	FH	100	92	83	1.03	32.03	48.38	28.66

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

o-Cresol - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***							
10 - Reiss Lime Company Ltd.	LP 0100	6	0	.15	.15	.15	.15

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

o-Cresol - Lab Corrections of Travelling Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
10 - Reiss Lime Company Ltd.	LP 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Blank Concentration and the Corrected Travelling Blank Concentration Divided by the Regulation Method Detection Limit.

o-Cresol - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
Chemical Lime/Magnesium Category - ***Priority 1***								
20	10 - Reiss Lime Company Ltd.	LP 0100	6	27.9	86.7	108.8	79.6	7.9

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

o-Cresol - Lab Corrections of Travelling Spiked Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
10 - Reiss Lime Company Ltd.	LP 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Spiked Blank Concentration and the Corrected Travelling Spiked Blank Concentration Divided by the Regulation Method Detection Limit.

o-Cresol - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
10 - Reiss Lime Company Ltd.	LP 0100	4	1.35	2.30	6.76	3.18

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

m-Cresol - Monitoring Samples: RMDL = 3.4 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*										
10 - Reiss Lime Company Ltd.	LP 0100	12	FH	100	100	92	3.53	25.44	43.82	24.75

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

m-Cresol - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*							
10 - Reiss Lime Company Ltd.	LP 0100	6	0	.13	.13	.13	.13

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

m-Cresol - Lab Corrections of Travelling Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
10 - Reiss Lime Company Ltd.	LP 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Blank Concentration and the Corrected Travelling Blank Concentration Divided by the Regulation Method Detection Limit.

m-Cresol - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
Chemical Lime/Magnesium Category - *Priority 1*								
20	10 - Reiss Lime Company Ltd.	LP 0100	6	59.9	139.2	197.4	134.9	9.1

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

m-Cresol - Lab Corrections of Travelling Spiked Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
10 - Reiss Lime Company Ltd.	LP 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Spiked Blank Concentration and the Corrected Travelling Spiked Blank Concentration Divided by the Regulation Method Detection Limit.

m-Cresol - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
10 - Reiss Lime Company Ltd.	LP 0100	4	.59	5.29	8.53	4.93

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

Phenol - Monitoring Samples: RMDL = 2.4 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency (%) >1RMDL	Frequency (%) >2RMDL	Frequency (%) >5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*										
10 - Reiss Lime Company Ltd.	LP 0100	12	FH	100	100	100	14.58	85.42	216.67	89.86

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Phenol - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*							
10 - Reiss Lime Company Ltd.	LP 0100	6	0	.16	.16	.16	.16

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

Phenol - Lab Corrections of Travelling Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
10 - Reiss Lime Company Ltd.	LP 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Blank Concentration and the Corrected Travelling Blank Concentration Divided by the Regulation Method Detection Limit.

Phenol - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
Chemical Lime/Magnesium Category - *Priority 1*								
20	10 - Reiss Lime Company Ltd.	LP 0100	6	21.0	55.3	74.4	53.2	12.9

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

Phenol - Lab Corrections of Travelling Spiked Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
10 - Reiss Lime Company Ltd.	LP 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Spiked Blank Concentration and the Corrected Travelling Spiked Blank Concentration Divided by the Regulation Method Detection Limit.

Phenol - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
10 - Reiss Lime Company Ltd.	LP 0100	4	.00	.42	12.08	3.23

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

2,4-Dimethylphenol - Monitoring Samples:

RMDL = 7.3 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***										
10 - Reiss Lime Company Ltd.	LP 0100	12	FM	75	67	50	.15	6.25	20.41	7.54

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

2,4-Dimethylphenol - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***							
10 - Reiss Lime Company Ltd.	LP 0100	6	0	.15	.15	.15	.15

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

2,4-Dimethylphenol - Lab Corrections of Travelling Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - ***Priority 1***						
10 - Reiss Lime Company Ltd.	LP 0100	1	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Blank Concentration and the Corrected Travelling Blank Concentration Divided by the Regulation Method Detection Limit.

2,4-Dimethylphenol - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
Chemical Lime/Magnesium Category - *Priority 1*								
20	10 - Reiss Lime Company Ltd.	LP 0100	6	36.3	90.8	108.6	82.6	4.2

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

2,4-Dimethylphenol - Lab Corrections of Travelling Spiked Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
10 - Reiss Lime Company Ltd.	LP 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Spiked Blank Concentration and the Corrected Travelling Spiked Blank Concentration Divided by the Regulation Method Detection Limit.

2,4-Dimethylphenol - Duplicate Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
10 - Reiss Lime Company Ltd.	LP 0100	4	.10	.19	.82	.32

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Monitoring Sample Concentration and the Duplicate Sample Concentration Divided by the Regulation Method Detection Limit.

1,2-Dichloroethane - Monitoring Samples:

RMDL = .8 ug/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*										
10 - Reiss Lime Company Ltd.	LP 0100	2	FL	100	0	0	1.02	1.02	1.02	1.02

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

1,2-Dichloroethane - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*							
10 - Reiss Lime Company Ltd.	LP 0100	2	100	1.02	1.02	1.02	1.02

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

1,2-Dichloroethane - Lab Corrections of Travelling Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
10 - Reiss Lime Company Ltd.	LP 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Blank Concentration and the Corrected Travelling Blank Concentration Divided by the Regulation Method Detection Limit.

1,2-Dichloroethane - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
Chemical Lime/Magnesium Category - *Priority 1*								
16	10 - Reiss Lime Company Ltd.	LP 0100	2	66.2	81.5	96.8	81.5	7.9

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

1,2-Dichloroethane - Lab Corrections of Travelling Spiked Blanks

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
10 - Reiss Lime Company Ltd.	LP 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Travelling Spiked Blank Concentration and the Corrected Travelling Spiked Blank Concentration Divided by the Regulation Method Detection Limit.

1,2-Dichloroethane - Lab Corrections of Monitoring Samples

Company	CtrlPt.	Number of Samples	Difference Ratios (1) Minimum	Median	Maximum	Average
Chemical Lime/Magnesium Category - *Priority 1*						
10 Reiss Lime Company Ltd.	LP 0100	2	.00	.00	.00	.00

NOTE: (1) Difference Ratio = Absolute Values of the Difference Between the Uncorrected Monitoring Sample Concentration and the Corrected Monitoring Sample Concentration Divided by the Regulation Method Detection Limit.

Cyanide (WAD) - Monitoring Samples:

RMDL = .005 mg/L

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	N	CLASS	Frequency >RMDL (%) >1RMDL	>2RMDL	>5RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - ***Priority 1***										
22 - The Canadian Salt Company	DC 0500	2	FM	100	100	50	4.60	12.30	20.00	12.30
Salt Category - ***Priority 2***										
22 - The Canadian Salt Company	MW 0300	2	NO	0	0	0	.20	.60	1.00	.60
22 - The Canadian Salt Company	PW 0100	4	NO	0	0	0	.10	.30	.40	.28

NOTE: (1) Concentration Ratio = Concentration Divided by the Regulation Method Detection Limit

Cyanide (WAD) - Travelling Blanks

Detection Frequencies and Concentration Ratios

Company	CtrlPt.	Number of Samples	% >RMDL	Concentration Ratios (1) Minimum	Median	Maximum	Average
Salt Category - ***Priority 1***							
22 - The Canadian Salt Company	DC 0500	2	0	.10	.10	.10	.10
Salt Category - ***Priority 2***							
22 - The Canadian Salt Company	PW 0100	4	0	.10	.10	.20	.13
22 - The Canadian Salt Company	MW 0300	2	0	.10	.10	.10	.10

NOTE: (1) Concentration Ratio = Travelling Blank Concentration Divided by the Regulation Method Detection Limit

APPENDIX C

Breakdown of Parameters Selected by Company

Cement Category
Parameters Selected by Company Effluent With Acceptable Monitoring Data

ATG	Parameter	1 CP 0100	2 CP 0200	2 QW 0300	2 SW 0400	3 CP 0100	3 QW 0200	4 CP 0300	4 QW 0400	5 CP 0100	5 QW 0200	6 CP 0100	6 QW 0200	6 SW 0400	6 SW 0500
06	Total phosphorus			X											
07	Specific conductance	X	X	X	X			X	X	X	X	X	X	X	X
08	Total suspended solids	X	X	X	X	X	X	X	X	X	X	X	X	X	X
09	Aluminum	X	X	X		X	X	X	X	X	X	X			
	Zinc					X						X	X		
14	Phenolics (4AAP)	X		X		X	X	X	X	X	X	X	X		X
15	Sulphide					X	X				X	X	X		
25	Oil and grease	X	X	X	X	X	X	X	X	X	X	X	X		
4a	Ammonia plus Ammonium			X			X		X		X		X		
4b	Nitrate+Nitrite	X	X	X	X	X	X		X	X	X	X	X	X	X
5a	DOC	X	X	X		X	X	X	X	X	X	X	X		
IM1	Chlorides	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IM4	Sulphates	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Company

01	St. Lawrence Cement
02	LaFarge, Bath
03	LaFarge, Woodstock
04	Essroc Canada Inc.
05	St. Marys, Bowmanville
06	St. Marys, St Marys

Chemical Lime/Magnesium Category
Parameters Selected by Company Effluent With Acceptable Monitoring Data

ATG	Parameter	7 LP 0100	8 LP 0100	9 LP 0100	9 LP 0200	10 LP 0100	11 LP 0100	12 LP 0100	13 MP 0100	13 SW 0200
02	Cyanide Total		X			X				X
07	Specific conductance	X	X	X	X	X	X	X	X	
08	Total suspended solids	X	X	X	X	X	X	X		X
09	Aluminum	X	X		X	X		X		
	Cobalt								X	
	Copper					X				
	Nickel	X							X	
	Vanadium	X				X				
	Zinc			X	X				X	
14	Phenolics (4AAP)		X			X				
15	Sulphide					X				
19	Phenanthrene					X				
20	2,4–Dimethylphenol					X				
	o–Cresol					X				
	m–Cresol					X				
	p–Cresol					X				
	Phenol					X				
25	Oil and grease	X	X	X	X	X	X	X		
4a	Ammonia plus Ammonium	X	X	X	X		X	X	X	X
4b	Nitrate+Nitrite		X	X	X	X	X	X		
5a	DOC	X	X	X	X	X		X	X	
IM1	Chlorides	X	X	X	X		X	X		
IM4	Sulphates	X	X	X	X		X	X		

Company	
07	Stelco Inc.
08	Beachvilime Ltd., East
09	Guelph Dolime
10	Reiss Lime Company Ltd.
11	Steetley Quarry Products
12	Beachvilime Ltd., West
13	Timminco Ltd.

Graphite/Gypsum/Nepheline Syenite/Basalt/Talc Category
Parameters Selected by Company Effluent With Acceptable Monitoring Data

ATG	Parameter	14 GP 0100	15 MW 0100	16 GYP 0200	16 MW 0100	17 GYP 0200	17 MW 0100	17 MW 0300	17 MW 0400	18 PW 0100	19 MW 0100	20 MW 0100	20 PW 0200
06	Total phosphorus					X						X	
07	Specific conductance	X	X	X	X	X	X	X			X	X	X
08	Total suspended solids	X	X	X	X	X	X	X	X	X	X		X
09	Aluminum			X	X	X		X					X
	Cadmium										X	X	
	Cobalt											X	
	Copper	X											
	Nickel										X		
	Zinc	X	X		X							X	X
10	Arsenic										X	X	X
14	Phenolics (4AAP)	X	X				X		X	X			
15	Sulphide		X			X	X	X					
19	Di–n–butyl phthalate		X										
25	Oil and grease	X	X	X	X		X		X				
4a	Ammonia plus Ammonium		X	X	X		X						
4b	Nitrate+Nitrite		X	X	X		X	X			X		X
5a	DOC			X	X	X	X	X			X	X	X
IM1	Chlorides		X	X	X	X	X	X					
IM4	Sulphates	X	X	X	X	X	X	X					

Company

14 Cal Graphite Corp.
15 Westroc Industries Ltd.
16 CGC Inc.
17 Domtar Inc.
18 Unimin Canada Ltd.
19 Canada Talc Ltd.
20 Luzenac Inc.

Salt Category
Parameters Selected by Company Effluent With Acceptable Monitoring Data

ATG	Parameter	21 MW 0200	21 PW 0100	22 DC 0500	22 IW 0600	22 MW 0300	22 PW 0100
01	COD	X	X	X		X	
02	Cyanide Total			X		X	
06	Total phosphorus	X		X		X	
08	Total suspended solids	X	X	X	X	X	X
09	Aluminum	X		X			X
	Zinc	X	X	X		X	
14	Phenolics (4AAP)	X		X		X	X
17	Toluene	X					
19	Di–n– butyl phthalate	X					
20	Pentachlorophenol	X					
25	Oil and grease	X	X	X		X	
4a	Ammonia plus Ammonium	X	X	X		X	
4a	Total Kjeldahl Nitrogen	X	X	X		X	X
4b	Nitrate+ Nitrite	X		X	X	X	X
5a	DOC	X	X	X		X	X
5b	TOC, Total Organic Carbon	X		X			
IM1	Chlorides	X	X	X	X	X	X
IM10	Dissolved Solids	X	X	X	X	X	X
IM4	Sulphates	X	X	X		X	X
IM8	Cyanide (WAD)			X			

Company
21 – Sifto Canada Inc.
22 – The Canadian Salt Company

Quarries Category
Parameters Selected by Company Effluent With Acceptable Monitoring Data

ATG	Parameter	28 QW 0100	29 QW 0100	31 QW 0100	32 QW 0100	33 QW 0100	35 QW 0100	36 QW 0100	37 QW 0100	38 QW 0100
08	Total suspended solids	X	X	X	X	X	X	X	X	X
14	Phenolics (4AAP)									X
25	Oil and grease	X	X			X		X		X
4a	Ammonia plus Ammonium	X		X					X	X

ATG	Parameter	39 QW 0100	41 QW 0100	42 QW 0100	42 WW 0200	43 QW 0100	44 QW 0100	45 QW 0100	46 QW 0100
08	Total suspended solids	X	X	X	X	X	X	X	X
14	Phenolics (4AAP)								
25	Oil and grease		X	X	X		X	X	X
4a	Ammonia plus Ammonium			X					

Company	
28	3M Canada Inc.
29	Amherst Quarries Ltd.
30	Boyce Quarry
31	Carden Quarry
32	Permanent Concrete Ltd.
33	Dufferin Quarry
34	Elginburg Quarry
35	Fallowfield Quarry
36	Flamboro Quarries Ltd.

Company (cont.)	
37	N & S Francon Quarries
38	R.E. Law Quarry
39	Bertrand and Frere
41	Milton Limestone
42	Nelson Quarry
43	Richier Quarry
44	Ridegemount Quarries Ltd.
45	Uhthoff Quarry
46	Allan G. Cook Ltd.

Clay and Shale Category
Parameters Selected by Company Effluent With Acceptable Monitoring Data

ATG	Parameter	23 SW 0100	24 SW 0100	25 SW 0100	25 SW 0200	26 SW 0100	27 SW 0100
07	Specific conductance	X	X	X	X	X	X
08	Total suspended solids	X	X	X	X	X	X
09	Aluminum		X	X	X	X	X
	Molybdenum				X	X	
	Zinc		X	X			X
15	Sulphide		X	X	X		X
25	Oil and grease		X	X			X
4b	Nitrate + Nitrite		X	X	X	X	X
5a	DOC		X	X	X	X	X
IM3	Fluoride	X	X	X	X	X	X

Company	
23	Brampton Brick Ltd.
24	Canada Brick, Burlington
25	Canada Brick, Cooksville
26	Canada Brick, Gloucester
27	Canada Brick, Streetsville

Sand and Gravel Category
Parameters Selected by Company Effluent With Acceptable Monitoring Data

ATG	Parameter	47 WW 0100
08	Total suspended solids	X
14	Phenolics (4AAP)	X
25	Oil and grease	X

Company	
47	Kam Aggregates Ltd.

APPENDIX D

Monitoring Data Classification Criteria

QC Flow Charts

General Procedure for Assessment of Monitoring Data

Flow charts for strategies used in assessing the QC data are given at the back of this appendix. The flow chart used is based on a parameters frequency and level of detection.

Parameters were categorized according to their frequency of detection based on the following criteria.

Frequently Found: Greater than 40% of the parameter's observations are above the RMDL.

Infrequently Found: For frequently monitored parameters[1], between 1% and 40% of the parameter's observations are above the RMDL.

For infrequently monitored parameters[2], between 11% and 40% of the parameter's observations are above the RMDL.

Non-Occurrence: For frequently monitored parameters, less than 1% of the parameter's observations are above the RMDL.

For less frequently monitored parameters, less than 11% of the parameter's observations are above the RMDL.

Within both the frequently and the infrequently found categories parameters were further classified according to the level of detection. Three sub-categories were used for this further classification:

- High Level - Used to describe quantitative data.
- Medium Level - Used to describe semi-quantitative data.
- Low Level - Used to describe qualitative data.

The following criteria for these classifications were used:

Frequent Occurrence:

High Level: Greater than 50% of the parameter's observations are above 5 times the RMDL.

Medium Level: Greater than 50% of the parameter's observations are above 2 times the RMDL.

Low Level: Greater than 40% of the parameter's observations are above the RMDL.

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[1]Frequently monitored parameters are those monitored thrice-weekly.

[2]Infrequently monitored parameters are those monitored monthly or quarterly.

Infrequent Occurrence:

High Level: Of those observations greater than 2 times the RMDL, more than 50% are higher than 5 times the RMDL.

Medium Level: Of those observations greater than the RMDL, more than 50% are higher than 2 times the RMDL.

Low Level: Observations do not fit the criteria listed for infrequent occurrence at either the high or medium level.

The following summary for the QC categories can be written:

Frequent Occurrence - High Level

Greater than 50% of the parameter's observations are greater than 5 times the RMDL.

Frequent Occurrence - Medium Level

Greater than 50% of the parameter's observations are greater than twice the RMDL.

Frequent Occurrence - Low Level

Greater than 40% of the parameter's observations are above the RMDL.

Infrequent Occurrence - High Level

For frequently monitored parameters, between 1% and 40% of the observations are above the RMDL, and of those observations greater than 2 times the RMDL, more than 50% are higher than 5 times the RMDL.

For infrequently monitored parameters, between 11% and 40% of the observations are above the RMDL, and of those observations greater than 2 times the RMDL, more than 50% are higher than 5 times the RMDL.

Infrequent Occurrence - Medium Level

For frequently monitored parameters, between 1% and 40% of the observations are above the RMDL, and of those observations higher than the RMDL, more than 50% are higher than 2 times the RMDL.

For infrequently monitored parameters, between 11% and 40% of the observations are above the RMDL, and of those observations higher than the RMDL, more than 50% are higher than 2 times the RMDL.

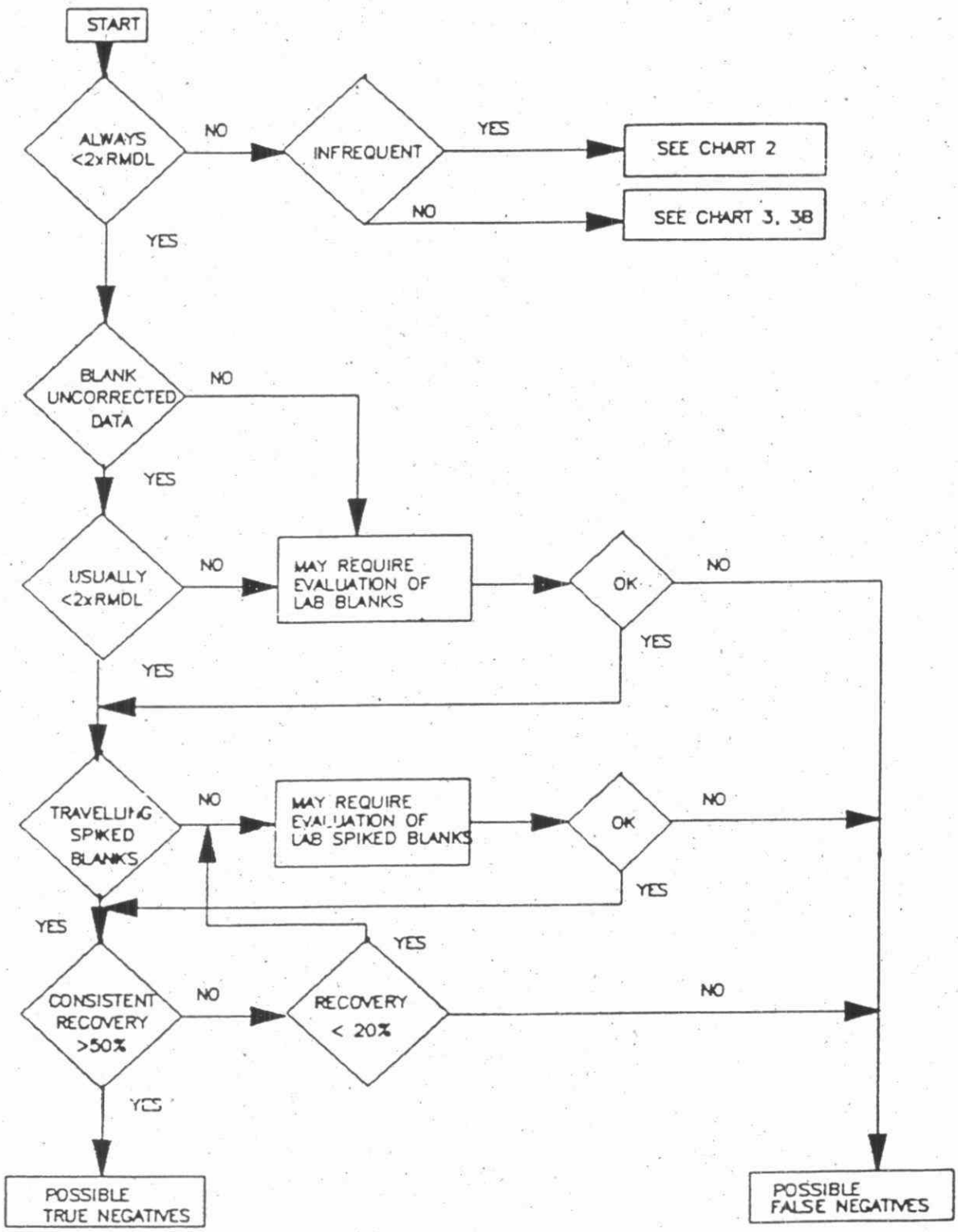
Infrequent Occurrence - Low Level

Observations do not fit the criteria listed for infrequent occurrence at either the high or medium level.

The categories discussed above are quite subjective and are used only for the purpose of identifying the predominant QA/QC concerns.

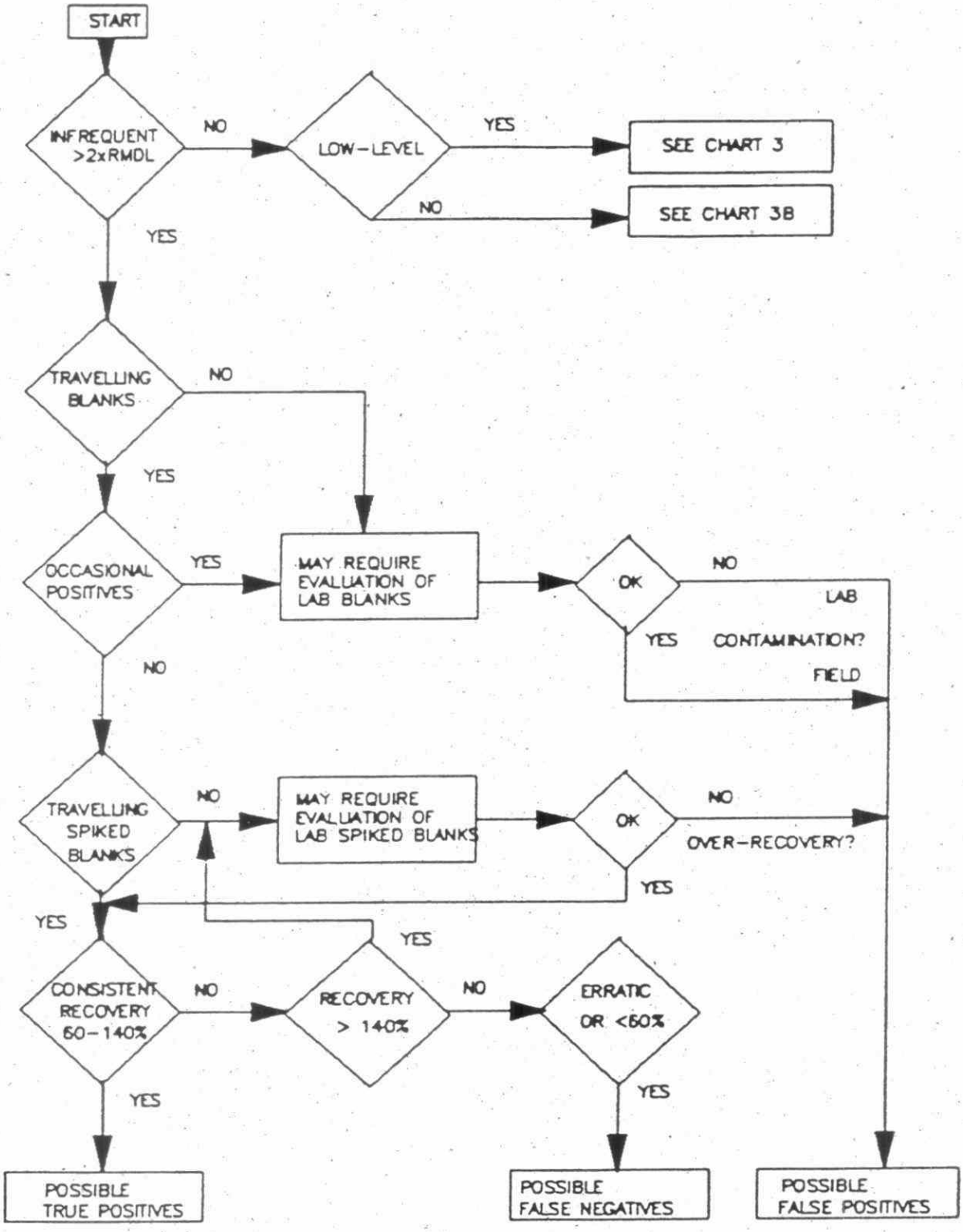
FLOWCHART 1

NON–OCCURRENCE



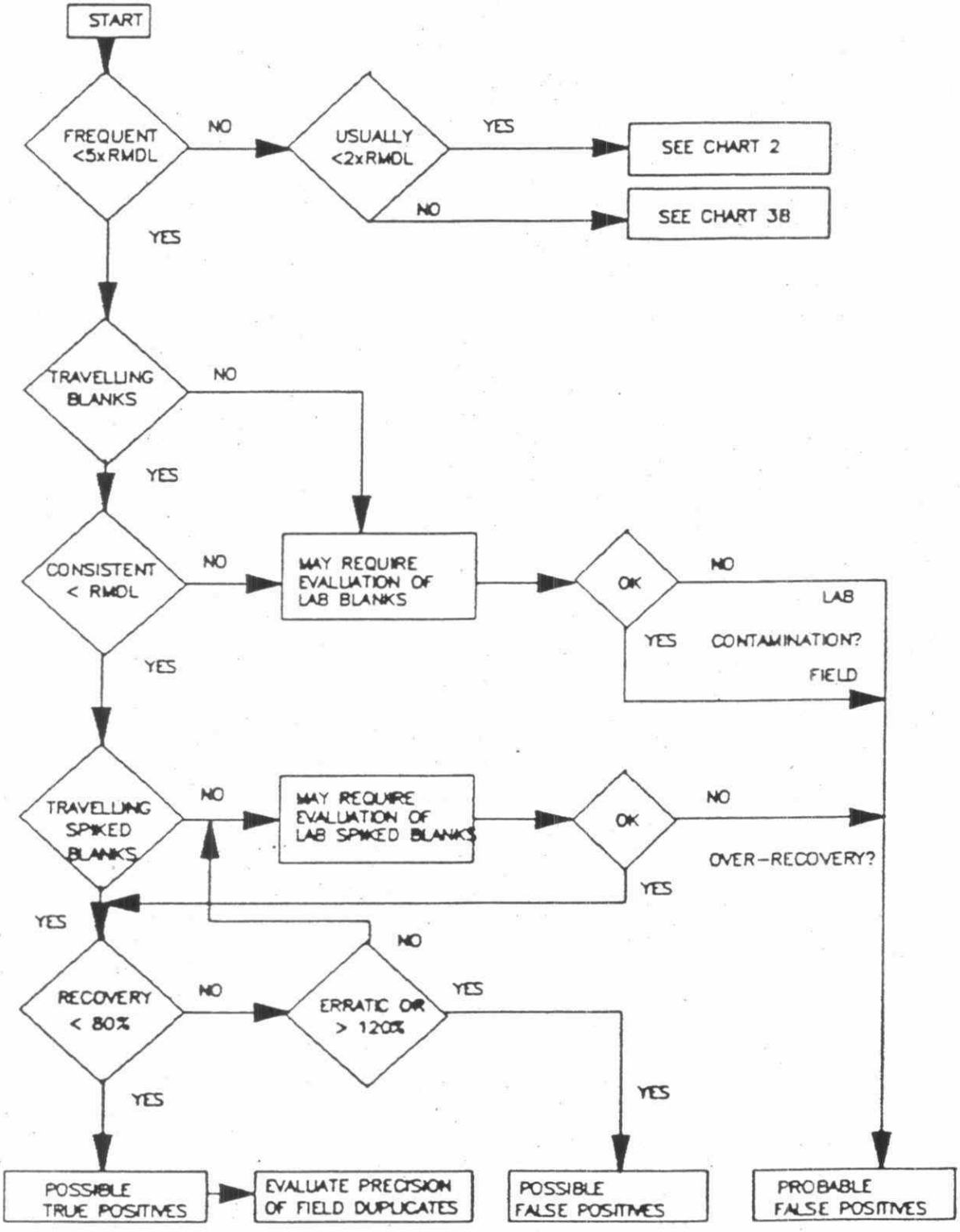
FLOWCHART 2

INFREQUENT OCCURRENCE



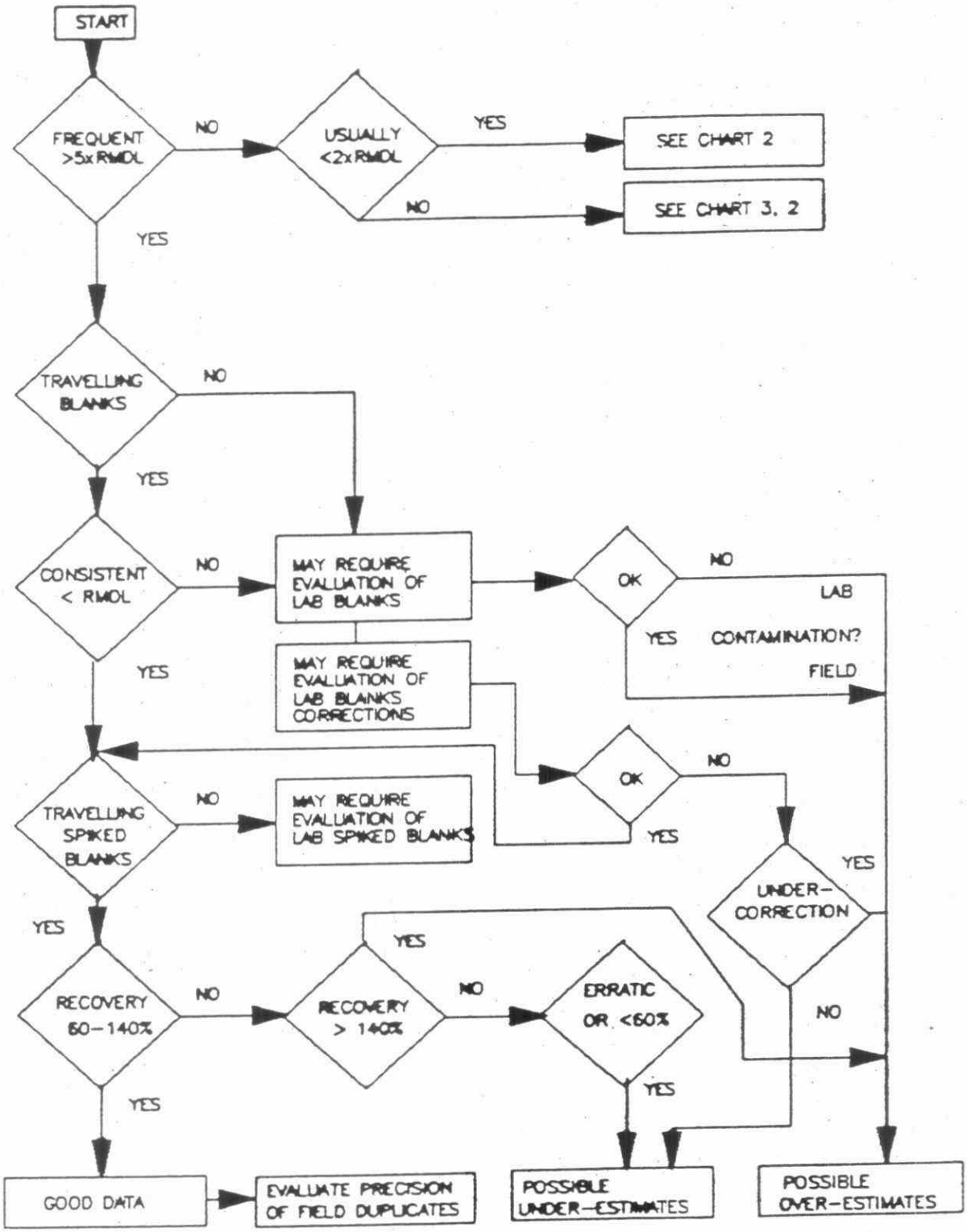
FLOWCHART 3

FREQUENT OCCURRENCE (LOW-LEVEL)



FLOWCHART 3B

FREQUENT OCCURRENCE (HIGH-LEVEL)



APPENDIX E

Non-selected Parameters with Under-recovery for Travelling Spiked Blanks

1,1,2,2-Tetrachloroethane - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
16	19 - Canada Talc Ltd.	MW 0100	1	20.0	20.0	20.0	20.0	2.3
	13 - Timminco Ltd.	MP 0100	1	14.0	14.0	14.0	14.0	2.3

Cis-1,3-Dichloropropylene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
16	21 - Sifto Canada Inc.	MW 0200	2	5.9	24.4	43.0	24.4	1.8
	15 - Westroc Industries Ltd.	MW 0100	2	5.0	5.5	5.9	5.5	1.8

Trans-1,3-Dichloropropylene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
16	31 - Carden Quarry	QW 0100	1	20.0	20.0	20.0	20.0	8.6
	15 - Westroc Industries Ltd.	MW 0100	2	10.4	12.8	15.1	12.8	.8

Trichlorofluoromethane - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
16	13 - Timminco Ltd.	MP 0100	1	2.5	2.5	2.5	2.5	10.0

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

Toluene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
17	46 - Allan G. Cook Ltd.	QW 0100	1	22.5	22.5	22.5	22.5	1.6
	35 - Fallowfield Quarry	QW 0100	1	5.0	5.0	5.0	5.0	20.0
	37 - N & S Francon Quarries	QW 0100	1	5.0	5.0	5.0	5.0	20.0
	32 - Permanent Concrete Ltd.	QW 0100	1	5.0	5.0	5.0	5.0	20.0
	39 - Bertrand and Frere	QW 0100	1	5.0	5.0	5.0	5.0	20.0
	43 - Richier Quarry	QW 0100	1	5.0	5.0	5.0	5.0	20.0
	30 - Boyce Quarry	QW 0100	1	5.0	5.0	5.0	5.0	20.0

Acrolein - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
18	21 - Sifto Canada Inc.	MW 0200	2	11.2	15.9	20.5	15.9	4.5
	21 - Sifto Canada Inc.	PW 0100	4	3.2	15.2	24.6	14.5	6.2

Diphenylamine - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	43 - Richier Quarry	QW 0100	1	14.0	14.0	14.0	14.0	.7
	19 - Canada Talc Ltd.	MW 0100	1	14.0	14.0	14.0	14.0	.7

Bis(2-chloroethyl)ether - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	24 - Canada Brick, Burlington	SW 0100	1	9.0	9.0	9.0	9.0	4.5

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

Bis(2-chloroethoxy)methane - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	33 - Dufferin Quarry	QW 0100	1	17.9	17.9	17.9	17.9	.9

Bis(2-chloroisopropyl)ether - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	33 - Dufferin Quarry	QW 0100	1	19.9	19.9	19.9	19.9	1.4
	46 - Allan G. Cook Ltd.	QW 0100	1	15.4	15.4	15.4	15.4	1.4
	24 - Canada Brick, Burlington	SW 0100	1	10.0	10.0	10.0	10.0	9.1

Benzylbutylphthalate - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	16 - CGC Inc.	MW 0100	1	22.5	22.5	22.5	22.5	33.3
	08 - Beachvilime Ltd., East	LP 0100	1	22.0	22.0	22.0	22.0	33.3
	43 - Richier Quarry	QW 0100	1	21.0	21.0	21.0	21.0	16.7
	19 - Canada Talc Ltd.	MW 0100	1	21.0	21.0	21.0	21.0	16.7
	35 - Fallowfield Quarry	QW 0100	1	18.0	18.0	18.0	18.0	16.7
	39 - Bertrand and Frere	QW 0100	1	18.0	18.0	18.0	18.0	16.7
	40 - MacCleod Quarry	QW 0100	1	16.0	16.0	16.0	16.0	16.7
	34 - Edinburg Quarry	QW 0100	1	15.0	15.0	15.0	15.0	16.7
	13 - Timminco Ltd.	MP 0100	1	15.0	15.0	15.0	15.0	16.7
	32 - Permanent Concrete Ltd.	QW 0100	1	14.0	14.0	14.0	14.0	16.7
	30 - Boyce Quarry	QW 0100	1	13.0	13.0	13.0	13.0	16.7
	20 - Luzenac Inc.	MW 0100	2	6.0	11.0	16.0	11.0	16.7
	07 - Stelco Inc.	LP 0100	1	10.5	10.5	10.5	10.5	33.3
	21 - Sifto Canada Inc.	MW 0200	1	10.0	10.0	10.0	10.0	6.7

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

Bis(2-ethylhexyl) phthalate - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	30 - Boyce Quarry	QW 0100	1	11.0	11.0	11.0	11.0	4.5
	25 - Canada Brick, Cooksville	SW 0100	1	7.0	7.0	7.0	7.0	9.1

Camphene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	09 - Guelph Dolime	LP 0200	1	17.5	17.5	17.5	17.5	5.7
	40 - MacCleod Quarry	QW 0100	1	17.0	17.0	17.0	17.0	2.9
	21 - The Canadian Salt Company	MW 0300	2	5.0	12.5	20.0	12.5	5.7
	12 - Beachvilime Ltd., West	LP 0100	1	12.5	12.5	12.5	12.5	5.7
	24 - Canada Brick, Burlington	SW 0100	1	5.0	5.0	5.0	5.0	5.7
	25 - Canada Brick, Cooksville	SW 0100	1	5.0	5.0	5.0	5.0	5.7

Di-n-butyl phthalate - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	34 - Edinburg Quarry	QW 0100	1	24.0	24.0	24.0	24.0	2.6
	20 - Luzenac Inc.	MW 0100	2	12.0	23.5	35.0	23.5	2.6

N-Nitrosodiphenylamine - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	43 - Richier Quarry	QW 0100	1	14.0	14.0	14.0	14.0	.7
	19 - Canada Talc Ltd.	MW 0100	1	14.0	14.0	14.0	14.0	.7

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

2-Chloronaphthalene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	43 - Richier Quarry	QW 0100	1	13.0	13.0	13.0	13.0	5.6
	19 - Canada Talc Ltd.	MW 0100	1	13.0	13.0	13.0	13.0	5.6

Benz(a)anthracene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	12 - Beachvilime Ltd., West	LP 0100	1	23.5	23.5	23.5	23.5	40.0

Benzo(a)pyrene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	09 - Guelph Dolime	LP 0200	1	25.0	25.0	25.0	25.0	33.3
	12 - Beachvilime Ltd., West	LP 0100	1	12.5	12.5	12.5	12.5	33.3

Benzo(b)fluoranthene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	44 - Ridegemount Quarries Ltd.	QW 0100	1	20.0	20.0	20.0	20.0	14.3
	12 - Beachvilime Ltd., West	LP 0100	1	17.5	17.5	17.5	17.5	28.6

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

Benzo(k)fluoranthene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	12 - Beachvilime Ltd., West	LP 0100	1	15.0	15.0	15.0	15.0	28.6

Chrysene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	12 - Beachvilime Ltd., West	LP 0100	1	19.0	19.0	19.0	19.0	66.7

Dibenz(a,h)anthracene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	12 - Beachvilime Ltd., West	LP 0100	1	14.5	14.5	14.5	14.5	15.4

Benzo(g,h,i)perylene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	12 - Beachvilime Ltd., West	LP 0100	1	13.5	13.5	13.5	13.5	28.6

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

Indole - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	39 - Bertrand and Frere	QW 0100	1	24.0	24.0	24.0	24.0	5.3
	40 - MacCleod Quarry	QW 0100	1	18.0	18.0	18.0	18.0	5.3
	35 - Fallowfield Quarry	QW 0100	1	12.0	12.0	12.0	12.0	5.3
	21 - Sifto Canada Inc.	MW 0200	1	10.0	10.0	10.0	10.0	2.1
	30 - Boyce Quarry	QW 0100	1	7.0	7.0	7.0	7.0	5.3
	13 - Timminco Ltd.	MP 0100	1	4.0	4.0	4.0	4.0	5.3

Indeno(1,2,3-cd)pyrene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	12 - Beachvilime Ltd., West	LP 0100	1	14.5	14.5	14.5	14.5	15.4

Naphthalene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	24 - Canada Brick, Burlington	SW 0100	1	16.5	16.5	16.5	16.5	12.5
	42 - Nelson Quarry	WW 0200	1	10.0	10.0	10.0	10.0	6.3

Perylene - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
19	45 - Uhthoff Quarry	QW 0100	1	21.0	21.0	21.0	21.0	6.7
	12 - Beachvilime Ltd., West	LP 0100	1	14.0	14.0	14.0	14.0	13.3

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

2,4-Dimethylphenol - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
20	06 - St. Marys, St Marys	CP 0100	2	8.5	21.8	35.0	21.8	2.7
	22 - The Canadian Salt Company	MW 0300	2	8.5	16.0	23.5	16.0	2.7
	22 - The Canadian Salt Company	PW 0100	4	8.5	12.5	20.0	13.4	2.7
	26 - Canada Brick, Gloucester	SW 0100	1	11.5	11.5	11.5	11.5	2.7
	16 - CGC Inc.	MW 0100	1	11.5	11.5	11.5	11.5	2.7
	02 - LaFarge, Bath	CP 0200	2	8.5	10.3	12.0	10.3	2.7
	03 - LaFarge, Woodstock	CP 0100	2	8.5	9.3	10.0	9.3	2.7
	37 - N & S Francon Quarries	QW 0100	1	9.0	9.0	9.0	9.0	1.4
	17 - Domtar Inc.	MW 0300	1	8.5	8.5	8.5	8.5	2.7
	22 - The Canadian Salt Company	DC 0500	2	8.5	8.5	8.5	8.5	2.7
	27 - Canada Brick, Streetsville	SW 0100	1	8.5	8.5	8.5	8.5	2.7
	24 - Canada Brick, Burlington	SW 0100	1	8.5	8.5	8.5	8.5	2.7
	25 - Canada Brick, Cooksville	SW 0100	1	8.5	8.5	8.5	8.5	2.7
	05 - St. Marys, Bowmanville	CP 0100	2	8.5	8.5	8.5	8.5	2.7
	04 - Essroc Canada Inc.	CP 0300	2	8.5	8.5	8.5	8.5	2.7
	08 - Beachvilime Ltd., East	LP 0100	1	8.5	8.5	8.5	8.5	2.7
	12 - Beachvilime Ltd., West	LP 0100	1	8.5	8.5	8.5	8.5	2.7
	09 - Guelph Dolime	LP 0200	1	5.0	5.0	5.0	5.0	2.7

2,4-Dinitrophenol - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
20	17 - Domtar Inc.	MW 0300	1	24.0	24.0	24.0	24.0	.5
	07 - Stelco Inc.	LP 0100	1	24.0	24.0	24.0	24.0	.5
	26 - Canada Brick, Gloucester	SW 0100	1	24.0	24.0	24.0	24.0	.5
	24 - Canada Brick, Burlington	SW 0100	1	24.0	24.0	24.0	24.0	.5
	25 - Canada Brick, Cooksville	SW 0100	1	24.0	24.0	24.0	24.0	.5
	16 - CGC Inc.	MW 0100	1	24.0	24.0	24.0	24.0	.5
	10 - Reiss Lime Company Ltd.	LP 0100	6	14.9	22.7	22.7	21.4	3.7

4,6-Dinitro-o-cresol - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
20	21 - Sifto Canada Inc.	PW 0100	4	14.5	21.1	145.0	50.4	1.1
	07 - Stelco Inc.	LP 0100	1	12.0	12.0	12.0	12.0	.8
	10 - Reiss Lime Company Ltd.	LP 0100	6	4.0	5.8	19.0	8.8	6.5

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

4-Nitrophenol - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
20	22 - The Canadian Salt Company	DC 0500	2	7.0	24.8	42.5	24.8	14.3
	06 - St. Marys, St Marys	CP 0100	2	7.0	23.3	39.5	23.3	14.3
	25 - Canada Brick, Cooksville	SW 0100	1	22.5	22.5	22.5	22.5	14.3
	45 - Uhthoff Quarry	QW 0100	1	20.9	20.9	20.9	20.9	92.9
	42 - Nelson Quarry	WW 0200	1	17.9	17.9	17.9	17.9	89.3
	44 - Ridegemount Quarries Ltd.	QW 0100	1	17.5	17.5	17.5	17.5	92.9
	42 - Nelson Quarry	QW 0100	1	17.0	17.0	17.0	17.0	89.3
	38 - R.E. Law Quarry	QW 0100	1	13.7	13.7	13.7	13.7	89.3
	31 - Carden Quarry	QW 0100	1	12.8	12.8	12.8	12.8	92.9
	17 - Domtar Inc.	MW 0300	1	7.0	7.0	7.0	7.0	14.3
	07 - Stelco Inc.	LP 0100	1	7.0	7.0	7.0	7.0	14.3
	24 - Canada Brick, Burlington	SW 0100	1	7.0	7.0	7.0	7.0	14.3

m-Cresol - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
20	42 - Nelson Quarry	WW 0200	1	18.0	18.0	18.0	18.0	2.9

o-Cresol - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
20	08 - Beachvilime Ltd., East	LP 0100	1	18.5	18.5	18.5	18.5	5.4
	42 - Nelson Quarry	WW 0200	1	12.0	12.0	12.0	12.0	2.7
	24 - Canada Brick, Burlington	SW 0100	1	8.5	8.5	8.5	8.5	5.4

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

p-Cresol - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
20	42 - Nelson Quarry	WW 0200	1	18.0	18.0	18.0	18.0	2.9

Phenol - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
20	45 - Uhthoff Quarry	QW 0100	1	24.8	24.8	24.8	24.8	10.4
	08 - Beachvilime Ltd., East	LP 0100	1	24.5	24.5	24.5	24.5	8.3
	03 - LaFarge, Woodstock	CP 0100	2	10.0	23.3	36.5	23.3	8.3
	42 - Nelson Quarry	QW 0100	1	23.2	23.2	23.2	23.2	10.4
	44 - Ridegemount Quarries Ltd.	QW 0100	1	20.8	20.8	20.8	20.8	10.4
	24 - Canada Brick, Burlington	SW 0100	1	8.0	8.0	8.0	8.0	8.3

2-Chlorophenol - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
20	24 - Canada Brick, Burlington	SW 0100	1	13.5	13.5	13.5	13.5	5.4
	42 - Nelson Quarry	WW 0200	1	1.6	1.6	1.6	1.6	6.8

2,3,4,6-Tetrachlorophenol - Travelling Spiked Blanks
Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
20	07 - Stelco Inc.	LP 0100	1	20.5	20.5	20.5	20.5	7.1
	08 - Beachvilime Ltd., East	LP 0100	1	17.0	17.0	17.0	17.0	7.1
	28 - 3M Canada Inc.	QW 0100	1	12.0	12.0	12.0	12.0	7.1

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

2,3,5,6-Tetrachlorophenol - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
20	07 - Stelco Inc.	LP 0100	1	20.5	20.5	20.5	20.5	12.5
	08 - Beachvilime Ltd., East	LP 0100	1	17.0	17.0	17.0	17.0	12.5
	28 - 3M Canada Inc.	QW 0100	1	12.0	12.0	12.0	12.0	12.5

2,4,6-Trichlorophenol - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
20	07 - Stelco Inc.	LP 0100	1	22.5	22.5	22.5	22.5	15.4

Pentachlorophenol - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
20	24 - Canada Brick, Burlington	SW 0100	1	24.5	24.5	24.5	24.5	15.4
	07 - Stelco Inc.	LP 0100	1	14.5	14.5	14.5	14.5	15.4
	42 - Nelson Quarry	WW 0200	1	13.2	13.2	13.2	13.2	96.2

PCBT - Travelling Spiked Blanks

Range of % Recoveries

ATG	Company	CtrlPt.	Number of Samples	% Recoveries (1) Minimum	Median	Maximum	Average	Spike/ RMDL (2)
27	13 - Timminco Ltd.	MP 0100	1	1.0	1.0	1.0	1.0	100.0

NOTE: (1) - % Recovery = Analytical Result Divided by the Quantity Spiked X 100%
(2) - Spike / RMDL = Quantity Spiked Divided by the Regulation Method Detection Limit (RMDL)

Appendix 3

The summary contained in appendix 3 is taken from the report:

Acute Lethality Data for Ontario's
Industrial Minerals Sector Effluents
Covering The Period From
May 1990 To May 1991

Prepared By:
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Aquatic Toxicity Unit
Water Resources Branch
Ontario Ministry of the Environment
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SUMMARY

Under the MISA program, the Industrial Minerals Sector was required to conduct laboratory toxicity tests to monitor its wastewater discharges for acute lethality to rainbow trout and to *Daphnia magna*. This requirement was based on the Ontario Environmental Protection Act, which allows the Ministry to write regulations requesting persons responsible for sources of contaminants to monitor, record and report to the Ministry. The requirements for toxicity testing are in the General Effluent Monitoring Regulation (Ontario Regulation 695/88 as amended to Ontario Regulation 533/89) and in the Effluent Monitoring Regulation For The Industrial Minerals Sector (Ontario Regulation 91/90). Some additional information is in, "The Development Document For The Effluent Monitoring Regulation For The Industrial Minerals Sector (Env. Ont. 1990). The monitoring data will be used, in part, to develop effluent limits for acute toxicity. This report is a compilation of the toxicity data for samples collected for the MISA monitoring year from May 1990 to May 1991 for the salt mines and for August, 1990 to August 1991 for the rest of the sector. It also includes data from audit samples tested at the Ministry's laboratory in Rexdale.

The regulatory toxicity tests were conducted by standard procedures (Protocol To Determine The Acute Lethality Of Liquid Effluents To Fish, Env. Ont. July 1983 and *Daphnia magna* Acute Lethality Toxicity Test Protocol, Env. Ont. April 1988). In these tests, the organisms are exposed to undiluted effluent and several effluent dilutions for a fixed period. The trout toxicity test is a 96 hour exposure, and a *Daphnia* toxicity test is a 48 hour exposure. The number of organisms that died is the toxic effect that is recorded. The quantitative measure of toxicity is the median lethal concentration (LC50) which is the concentration of effluent estimated to cause mortality to 50% of the test organisms.

All plants except sand and gravel quarries were required to sample for toxicity once in August and once in November. If one trout test had significant mortalities in any concentration, they were required to test monthly for the rest of the year. Sand and Gravel and Quarries were required to test once sometime between August and November. If significant mortalities occurred, they were required to test three additional tests.

The monitoring occurred at 58 sampling locations at 46 sites. For 3 sites, samples were consistently lethal to one or both of the test animals. For 8 sites, samples were sometimes lethal to one or both animals. From the remaining 35 sites, samples were normally non-lethal to both animals. For the period of February, 1990 to October, 1991, the Ministry reviewed the results for 177 trout and 177 *Daphnia* tests. For trout: 133 samples were nonlethal, 26 samples had LC50s > 100% effluent and 18 samples were lethal (LC50 < 100% effluent). For *Daphnia*: 124 samples were nonlethal, 25 samples had LC50s > 100% effluent and 28 samples were lethal (LC50 <100% effluent).

Toxicity tests from the following sites was not submitted as required by the regulation. Samples from Reiss Lime were lethal and the company should have sampled monthly. Beachvilime, West Plant failed to submit one trout sample. St. Lawrence Cement, Mississauga failed to submit one trout test. Timminco Metals failed to submit one trout and one *Daphnia* test result. Unimin had significant trout mortalities and should have submitted monthly test results.

The Ministry of the Environment's Aquatic Toxicity Unit performed 87 audit tests over the monitoring period, and found that the results of audits were generally consistent with the results submitted by industry. The differences that were observed between the results can be explained primarily by variability in effluent quality; the audits were not tests of split samples.

A preliminary interpretation of the toxicity results, concerning the possible causes of acute lethality, is given below. The Toxicity Test Reports for the samples, reports summarizing the analytical chemistry data for each process effluent, as well as plots from the electronic database were used for this purpose.

Salt Mines

One of the two Samples from the Godrich Mine at Sifto Salt Division, Domtar, Inc., Godrich was acutely lethal to trout and the second sample was lethal to *Daphnia*. Samples from Manhole 3A were lethal to *Daphnia* but not to trout. Both samples from the Ojibway Mine at the Canadian Salt Company Ltd. site in Windsor were very toxic to both animals. One of the five samples from the E1 Main Sewer was toxic to *Daphnia*. In the above sampling locations, the most probable causes are the high level of suspended solids and salts. Neither trout nor *Daphnia* are particularly sensitive to salt concentrations but the levels are even higher than they can tolerate. Ammonia levels may also contribute in the salt mine effluents.

Graphite, gypsum, nepheline syenite, basalt, calcium, talc category

One of the six samples from the effluent from CGC Hagersville Gypsum Mine, Hagersville was toxic to trout for unknown causes. None of the samples were toxic to *Daphnia* from this site. One of two samples from Unimin Canada Ltd. was lethal to both trout and *Daphnia*. Values of pH sometimes exceed 11 in the wash water effluent. The rest of the dischargers in this category had non-lethal samples.

Cement Plants

Three of 13 samples from Essroc Canada Cement, Picton were acutely lethal to both trout

and *Daphnia*. The most probable cause is high pH which reaches as high as 12 in this effluent. Also involved in the toxicity may by high levels of suspended solids. Similarly, six of twelve samples from St. Mary's Cement in Bowmanville were lethal to *Daphnia* but not to trout. Suspended solids are suspected for these since *Daphnia* tend to be more susceptible to them than trout.

Lime Plants

Both samples from Reiss Lime Co. were acutely lethal to both trout and *Daphnia*. The probable cause is high pH which often exceeds 10 in this discharge. Six of twelve samples from Beachvilime Ltd., East Plant, Beachville effluent were toxic to trout and to *Daphnia*. The probable cause is high pH which sometimes exceeds 11 at this site.

Quarries and Clay and Shale categories

The samples from both the quarries category and from the clay and shale category were not acutely lethal to either test animal.

Other considerations

The toxicity tests will detect harmful concentrations and mixtures of most chemical constituents of effluents. But compliance with end-of-pipe limits for acute toxicity would not necessarily control the potential effects of environmental contamination that can be caused by the loading of bioaccumulative substances. These substances are generally nonpolar organic chemicals of high molecular weight and low water solubility or metals such as mercury which accumulate in its organic forms or cadmium which can cause permanent damage at sublethal levels accumulating over the life span of aquatic animals.

The body of this report, presents the summaries of the acute lethality data, grouped by company. These summary pages are part of the complete database, that includes the Toxicity Test Report submitted by industry for each test sample. The details from the database are available from the Water Resources Branch, upon request. The comment fields on individual Toxicity Test Reports were entered by the industry's laboratory performing the tests, and should not be expected to be consistent across samples and do not necessarily represent the views of the Ministry.

Appendix 4

Provincial Water Quality
Objectives and Guidelines

TABLE 1: PROVINCIAL WATER QUALITY OBJECTIVES AND GUIDELINES October 92

SUBSTANCE	C.A.S. NUMBER *	PWQO STATUS	VALUE (µg/L)
2,4-D (BEE)	1928-45-6	PWQO	4
abietic acid	514-10-3	PWQG (j)	(a), (j)
Aldrin/Dieldrin	309-00-2	PWQO	0.001
alkalinity	NA	PWQO	no decrease >25%
aluminum	7429-90-5	PWQG	(a)
ammonia (un-ionized)	7664-41-7	PWQO	20
aniline	62-53-3	PROPOSED PWQG	2
antimony	7440-36-0	PROPOSED PWQG	7
Aroclor 1016	12674-11-2	PWQO (j)	(j)
Aroclor 1221	11104-28-2	PWQO (j)	(j)
Aroclor 1232	11141-16-5	PWQO(j)	(j)
Aroclor 1242	53469-21-9	PWQO (j)	(j)
Aroclor 1248	12672-29-6	PWQO (j)	(j)
Aroclor 1254	11097-69-1	PWQO (j)	(j)
Aroclor 1260	11096-82-5	PWQO (j)	(j)
arsenic	7440-38-2	PWQO	100
benzene	71-43-2	PROPOSED PWQG	100
beryllium	7440-41-7	PWQO	(a)
di-n- butylphthalate	84-74-2	PWQO (g)	(g)
cadmium	7440-43-9	PWQO	0.2
cadmium (revised)	7440-43-9	PROPOSED PWQO	(a)
Chlordane	57-74-9	PWQO	0.06
chlorine	7782-50-5	PWQO	2
chlorobenzene (monochlorobenzene)	108-90-7	PWQO	15
o- chlorophenol (2-chlorophenol)	95-57-8	PWQO	(d)
chromium	7440-47-3	PWQO	100
cobalt	7440-48-4	PROPOSED PWQG	0.4
copper	7440-50-8	PWQO	5
copper (revised)	7440-50-8	PROPOSED PWQO	(a)
p- cresol	106-44-5	PROPOSED PWQG	1
o- cresol	95-48-7	PROPOSED PWQG	1
m- cresol	108-39-4	PROPOSED PWQG	1
cyanide (free)	57-12-5	PWQO	5
Dalapon	75-99-0	PWQO	110
DDT & metabolites	50-29-3	PWQO	0.003
dehydroabietic acid	1740-19-8	PWQG	(a)
Diazinon	333-41-5	PWQO	0.08
dibutylphthalate	84-74-2	PWQO	4
Dicamba		PWQO	200
1,3- dichlorobenzene	541-73-1	PWQO	2.5
1,2- dichlorobenzene	95-50-1	PWQO	2.5
1,4- dichlorobenzene	106-46-7	PWQO	4
1,1- dichloroethane	75-34-3	PROPOSED PWQG	200
1,2- dichloroethane	107-06-2	PROPOSED PWQG	90
1,1- dichloroethylene	75-35-4	PROPOSED PWQG	40
trans-1,2- dichloroethylene	156-60-5	PROPOSED PWQG	200
cis-1,2- dichloroethylene	156-59-2	PROPOSED PWQG	200
dichlorophenol		PWQO	0.2
2,4- dichlorophenol	120-83-2	PWQO	0.2
2,6- dichlorophenol	87-65-0	PWQO	0.2
diethylhexylphthalate	117-81-7	PWQO	0.6
diethylphthalate (DEP)	84-66-2	PWQO	(h)
2,6- dimethylnaphthalene	NA	PROPOSED PWQG	0.02
1,3- dimethylnaphthalene	NA	PROPOSED PWQG	0.09
2,6- dimethylphenol	576-26-1	PROPOSED PWQG	8.4

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TABLE 1: PROVINCIAL WATER QUALITY OBJECTIVES AND GUIDELINES October 92

SUBSTANCE	C.A.S. NUMBER *	PWQO STATUS	VALUE (µg/L)
3,4- dimethylphenol	95-65-8	PROPOSED PWQG	17.5
2,4- dimethylphenol	105-67-9	PROPOSED PWQG	10.5
dimethylphenols (isomer non-specific)	1300-71-6	PROPOSED PWQG	(c)
dimethylphthalate	131-11-3	PWQO	(h)
p- dinitrobenzene	NA	PROPOSED PWQG	2
o- dinitrobenzene	NA	PROPOSED PWQG	1
m- dinitrobenzene	NA	PROPOSED PWQG	1
2,6- dinitrotoluene	606-20-2	PROPOSED PWQG	3
2,4- dinitrotoluene	121-14-2	PROPOSED PWQG	4
4,6- dinitro-o-cresol	534-52-1	PROPOSED PWQG	0.2
Diquat	2764-72-9	PWQO	0.5
dissolved gases	NA	PWQO	<110 % sat. value
dissolved oxygen	NA	PWQO	(a)
Diuron	330-54-1	PWQO	1.6
di-n-butyltin	683-18-1	PROPOSED PWQG	0.08
Dursban	2921-88-2	PWQO	0.001
Endosulphan	115-29-7	PWQO	0.003
Endrin	72-20-8	PWQO	0.002
ethylbenzene	100-41-4	PROPOSED PWQG	8
Fenthion	55-38-9	PWQO	0.006
Guthion	86-50-0	PWQO	0.005
Heptachlor & Heptachlor epoxide	76-44-8	PWQO	0.001
hexachlorobenzene	118-74-1	PWQO	0.0065
hexachlorobutadiene	87-68-3	PROPOSED PWQG	0.07
hexachloroethane	67-72-1	PROPOSED PWQG	0.5
hydrogen sulphide	7783-06-4	PWQO	2
iron	7439-89-6	PWQO	300
isopimaric acid	5835-26-7	PWQG (j)	(a), (j)
lead	7439-92-1	PWQO	(a)
lead (revised)	7439-92-1	PROPOSED PWQO	(a)
levopimaric acid	79-54-9	PWQG (j)	(a), (j)
Lindane (gamma - 1,2,3,4,5,6-hexachlorocyclohexane)	58-89-9	PWQO	0.01
Malathion	121-75-5	PWQO	0.1
mercury	7439-97-6	PWQO	0.2
Methoxychlor	74-43-5	PWQO	0.04
2- methylnaphthalene	91-57-6	PROPOSED PWQG	2
1- methylnaphthalene	90-12-0	PROPOSED PWQG	2
Mirex	2385-85-5	PWQO	0.001
molybdenum	7439-98-7	PROPOSED PWQG	10
monochlorobenzene (chlorobenzene)	108-90-7	PWQO	15
monochlorophenol	25167-80-0	PWQO	7
neoabietic acid	471-77-2	PWQG (j)	(a), (j)
nickel	7440-02-0	PWQO	25
nitrobenzene	98-95-3	PROPOSED PWQG	0.02
4- nitrophenol	100-02-7	PROPOSED PWQG	48
2- nitrophenol	88-75-5	PROPOSED PWQG	0.5
3- nitrophenol	NA	PROPOSED PWQG	22
di-n- octylphthalate	117-84-0	PWQO	(h)
OIL & GREASE	NA	PWQO	(a)
palustric acid	1945-53-5	PWQG (j)	(a), (j)
Parathion	56-38-2	PWQO	0.008
pentachlorobenzene	608-93-5	PWQO	0.03
pentachlorophenol	87-86-5	PWQO	0.5
pH	NA	PWQO	6.5-8.5
phenol (monohydroxybenzene)	NA	PROPOSED PWQG	5

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SUBSTANCE	C.A.S. NUMBER *	PWQO STATUS	VALUE (µg/L)
phenols	108-95-2	PWQO	1
phosphorus, total	7723-14-01	PWQG	(a)
bis(2-ethylhexyl) phthalate	117-81-7	PWQO (f)	(f)
phthalates, other	various	PWQO	0.2
pimaric acid	127-27-5	PWQG (j)	(a), (j)
polychlorinated biphenyl (PCBs - TOTAL)	various	PWQO	0.001 (j)
Pyrethrum	8003-34-7	PWQO	0.01
Radionuclides	various	PWQO	(a)
resin acids, total	various	PWQG	(a)
sandaracopimaric acid		PWQG (j)	(a), (j)
selenium	7782-49-2	PWQO	100
silver	7440-22-4	PWQO	0.1
Simazine	122-34-9	PWQO	10
strontium	7440-24-6	PROPOSED PWQG	7
styrene	100-42-5	PROPOSED PWQG	4
SWIMMING AND BATHING	NA	PWQO	(a)
TEMPERATURE	NA	PWQO	(a)
1,2,4,5- tetrachlorobenzene	95-94-3	PWQO	0.15
1,2,3,4- tetrachlorobenzene	634-66-2	PWQO	0.1
1,2,3,5- tetrachlorobenzene	634-90-2	PWQO	0.1
2,3,7,8- tetrachlorodibenzo-p-dioxin	1746-01-6	PROPOSED PWQG	0.02 pg/L
2,3,7,8- tetrachlorodibenzo-p-furan	51207-13-9	PROPOSED PWQG	0.2 pg/L
1,1,2,2- tetrachloroethane	79-34-5	PROPOSED PWQG	50
tetrachloroethylene	127-18-4	PROPOSED PWQG	50
tetrachlorophenol	25167-83-3	PWQO	1
2,3,5,6- tetrachlorophenol	935-95-5	PWQO	1
2,3,4,6- tetrachlorophenol	58-90-2	PWQO	1
2,3,4,5- tetrachlorophenol	4901-51-3	PWQO	1
tetraethyl lead	78-00-2	PROPOSED PWQG	0.0007
tetramethyl lead	75-74-1	PROPOSED PWQG	0.006
thallium	7440-28-0	PROPOSED PWQG	0.3
toluene	108-88-3	PROPOSED PWQG	0.8
Toxaphene	NA	PWQO	0.008
tributyltin	various	PROPOSED PWQG	0.00004
1,2,3- trichlorobenzene	87-61-6	PWQO	0.9
1,2,4- trichlorobenzene	120-82-1	PWQO	0.5
1,3,5- trichlorobenzene	108-70-3	PWQO	0.65
1,1,2- trichloroethane	79-00-5	PROPOSED PWQG	800
trichloroethylene	79-01-6	PROPOSED PWQG	2
2,4,6- trichlorophenol	88-06-2	PWQO	18
2,4,5- trichlorophenol	95-95-4	PWQO	18
2,3,5- trichlorophenol	933-78-8	PWQO	18
2,3,4- trichlorophenol	15950-66-0	PWQO	18
trichlorophenols	108-70-3	PWQO	18
triethyl lead	78-00-2	PROPOSED PWQG	0.4
triethyltin	994-31-0	PROPOSED PWQG	0.01
triphenyltin	76-87-9	PROPOSED PWQG	0.001
TURBIDITY	NA	PWQO	<10% secchi disk Δ
vanadium	7440-62-2	PROPOSED PWQG	7
o- xylene	95-47-6	PROPOSED PWQG	40
m- xylene	108-38-3	PROPOSED PWQG	2
p- xylene	106-42-3	PROPOSED PWQG	30
zinc	7440-66-6	PWQO	30
zinc (revised)	7440-66-6	PROPOSED PWQG	20

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LEGEND

(a) PWQO/G is either a narrative, or dependent on pH, alkalinity, or hardness; see Blue Book Table 1 and attached tables

(c) proposed PWQG's are available for some isomers of dimethylphenol

(d) PWQO is for MONOCHLOROPHENOL (7 μg/L)

(f) PWQO is for DIETHYLHEXYLPHTHALATE (0.6 μg/L)

(g) PWQO is for DIBUTYLPHTHALATE (4.0 μg/L)

(h) PWQO is for OTHER PHTHALATES (0.2 μg/L)

(j) PWQO/G is available for total PCB's, for total resin acids and for DHA, but not other individual isomers

PWQG = Provincial Water Quality Guideline

PWQO = Provincial Water Quality Objective

ALUMINUM, PHOSPHORUS AND RESIN ACIDS GUIDELINES

PARAMETER	PROVINCIAL WATER QUALITY GUIDELINE
ALUMINUM, INORGANIC MONOMERIC	0.015 mg/L, at pH 4.5 to 5.5 measured in clay-free samples
ALUMINUM, ACID SOLUBLE INORGANIC	<10% increase above avge. background at pH>5.5-6.5 in clay free samples
ALUMINUM, TOTAL	0.075 mg/L at pH 6.5-9.0 measured in clay free samples
DHA	*see footnote 1*
RESIN ACIDS, TOTAL	*see footnote 1*
PHOSPHORUS, TOTAL	To avoid nuisance algae concentrations in lakes, total P should not exceed 20 μg/L
	To protect against aesthetic deterioration in lakes, total P should not esceed10 μg/L
	To avoid excess plant growth in rivers & streams, total P should not exceed 30 μg/L

PROPOSED METAL PWQO/G

SUBSTANCE	HARDNESS (mg/L)	PROPOSED PWQO/G (μg/L)
CADMIUM	0 - 100	0.15
	> 100	0.45
COPPER	0 - 20	1
	> 20	5
LEAD	0 -30	1
	30 -80	3
	> 80	5

Footnote 1: Total resin acids and DHA are pH dependent as shown below:

Receiving water pH	DHA (μg/L)	Total Resin Acids (μg/L)
5	1	1
5.5	2	3
6	2	4
6.5	4	9
7	8	25
7.5	12	45
8	13	52
8.5	14	60
9	14	62

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